A1310-1.1 F

American Council for Capital Formation
Center for Policy Research

June 1989

SPECIAL REPORT

The U.S. Cost of Capital and Recent Tax Policy

The cost of capital in the United States today is considerably higher than in Japan, West Germany, and most of our other competitors--a situation that is of growing concern to economists and policymakers. Lower capital costs promote higher investment, which increases a nation's capital stock, provides more capital per worker, and results in greater productivity and growth in the standard of living. This special report focuses on how the U.S. compares internationally and how recent revisions to the federal tax code have affected U.S. capital costs.

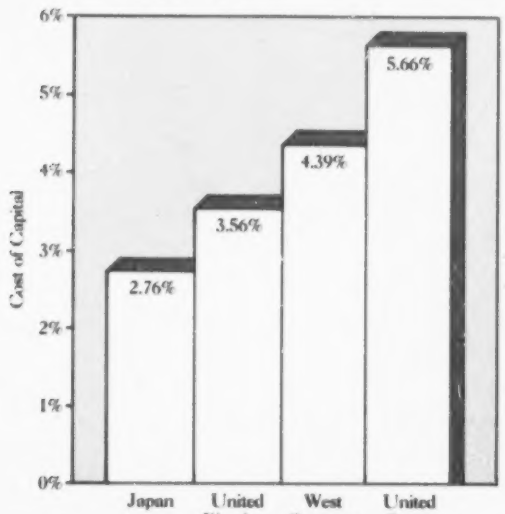
The Concept of Capital Costs

The cost of capital is the pretax return on a new investment that is required to cover the purchase price of the asset, the market rate of interest, inflation, economic depreciation, and taxes. This capital cost concept is often called the user cost of capital or the "hurdle rate" because it measures the return an investment must yield before a firm would be willing to undertake the capital expenditure.

For example, for a typical manufacturing firm to be willing to purchase a new piece of equipment, given current tax law and economic conditions, the asset today would have to yield an annual return of approximately 22 percent. This yield would cover all costs, including the purchase price of the equipment, real (economic) depreciation, financing costs, and taxes.

Often a slightly different measure of the cost of capital, the pretax return required by an investor, is used. The only difference between the user cost (or "hurdle rate")

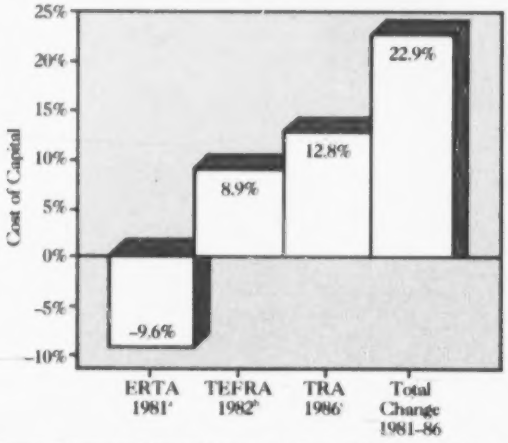
Chart 1: International Comparisons of the Cost of Capital



Source: B. Douglas Bernheim and John B. Shoven, "Taxation and the Cost of Capital: An International Comparison," in Charls E. Walker and Mark A. Bloomfield, eds., *The Consumption Tax: A Better Alternative?* (Cambridge, Mass., Ballinger Publishing Co., 1987). Chart prepared by the American Council for Capital Formation.

Note: Cost of capital for an average of debt and equity funds. The cost of capital measure used here is the pretax return required by an investor, which is net of economic depreciation.

Chart 2: Impact of U.S. Tax Code Revisions on the Cost of Capital for Equipment Used in Manufacturing (User Cost Basis)



Source: Congressional Research Service, Library of Congress, "Effects of Alternative Tax Regimes on the Cost of Capital for Selected Types of Equipment," February 1989 (unpublished). Chart prepared by the American Council for Capital Formation.

Note: The cost of capital measure used here is the user cost, which includes economic depreciation.

[a]The Economic Recovery Tax Act of 1981 (ERTA) reduced rates compared to prior law.

[b]The Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) reduced ERTA's investment incentives.

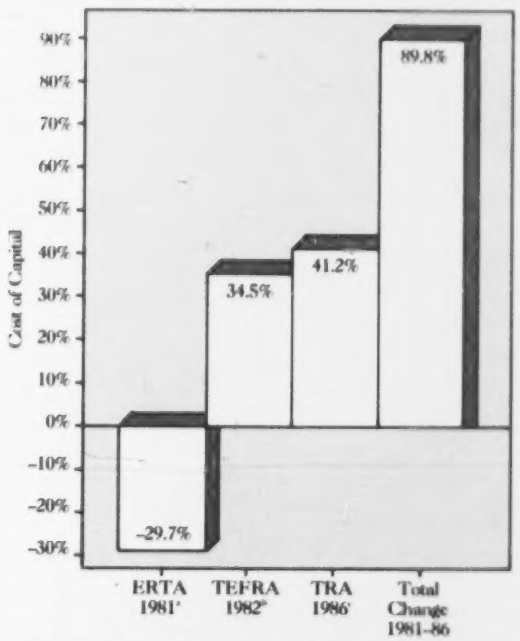
[c]The Tax Reform Act of 1986 (TRA) further reduced the investment incentives available under TEFRA and raised effective tax rates to a level higher than that prevailing in 1980.

and the pretax return measure is that the former includes economic depreciation (about 15 percent per year for equipment, for example). Economic depreciation, which measures the actual useful life of the asset, does not vary with the tax code.

International Comparisons

International comparisons based on the pretax return cost of capital measure show that the cost of capital for equipment in the United States is 5.66, compared with 2.76 in Japan—a difference of more than 100 percent. The U.S. cost of capital also exceeds the United Kingdom's 3.56 percent and West Germany's 4.39 percent. The most significant factors contributing to variations in capital costs among countries are differences in real interest rates and tax codes (see chart 1).

Chart 3: Impact of U.S. Tax Code Revisions on the Cost of Capital for Equipment Used in Manufacturing (Pretax Return Basis)



Source: Congressional Research Service, Library of Congress, "Effects of Alternative Tax Regimes on the Cost of Capital for Selected Types of Equipment," February 1989 (unpublished). Chart prepared by the American Council for Capital Formation.

Note: The capital cost used here is the pretax return required by an investor, which is net of economic depreciation.

[a]The Economic Recovery Tax Act of 1981 (ERTA) reduced rates compared to prior law.

[b]The Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) reduced ERTA's investment incentives.

[c]The Tax Reform Act of 1986 (TRA) further reduced the investment incentives available under TEFRA and raised effective tax rates to a level higher than that prevailing in 1980.

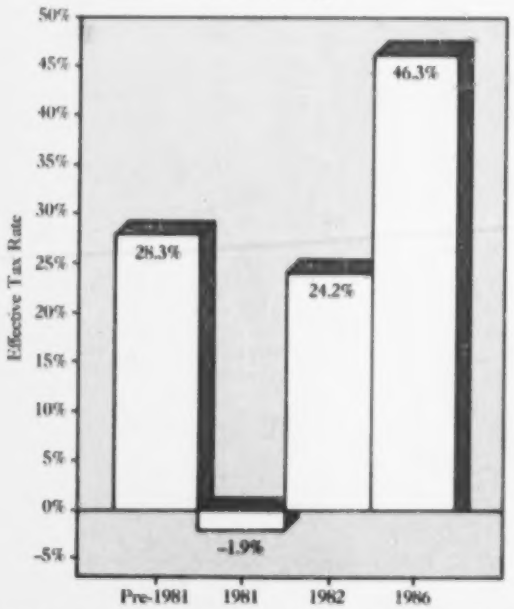
The most serious consequence of high U.S. capital costs is that productivity growth is impeded. Fiscal policy experts agree that U.S. productivity growth has lagged, in part because our investment per worker has been much lower than that of many of our competitors.

Recent U.S. Tax Policy

Federal tax policy was responsible for increasing the user cost of capital for equipment in the United States by about 23 percent from 1981 to 1986 (see chart 2). Capital costs (measured as the pretax return required by an investor) rose almost 90 percent during this period (see chart 3). Effective tax rates on new investment reflect capital costs. After the passage of the Economic Recovery Tax Act of 1981 (ERTA), the tax rate on equipment approximated expensing; by 1986 when the Tax Reform Act was enacted, the rate increased to 46.3 percent—which exceeds the statutory rate of 34 percent (see chart 4).

A major factor contributing to an effective tax rate of 46.3 percent is the lack of indexing for depreciation and for interest income and expenses. Such tax policies can and must be reversed in order to bring U.S. capital costs more in line with those of our major competitors.

Chart 4: Effective Tax Rates on Equipment Used in Manufacturing



Source: Congressional Research Service, Library of Congress, "Effects of Alternative Tax Regimes on the Cost of Capital for Selected Types of Equipment," February 1989 (unpublished). Chart prepared by the American Council for Capital Formation.

The ACCF Center for Policy Research is the education and research affiliate of the American Council for Capital Formation. Its mandate is to promote an understanding by the public of the importance of capital formation to the economy. For additional information please contact: ACCF Center for Policy Research, 1850 K Street, N.W., Suite 400, Washington D.C., 20006, (202) 293-5811.

A1310-1.2 F

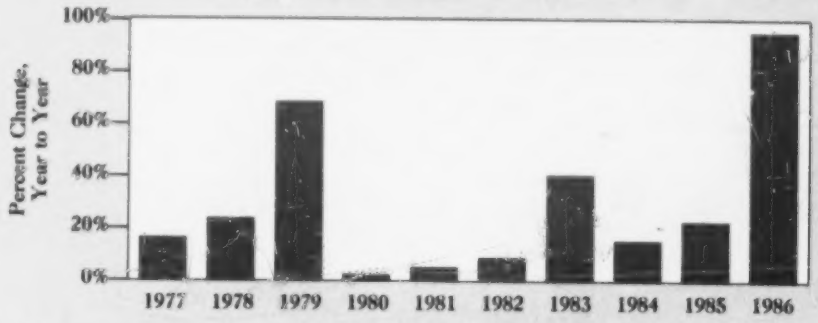
American Council for Capital Formation
Center for Policy Research

SPECIAL REPORT

September 1989

The Importance of Capital Gains Tax Rates to Individual and Corporate Investors

Chart 1: Individual Capital Gains Realizations, 1977–1986



Note: Percent change calculated from realized net long-term capital gains less net long-term capital losses.

Chart 2: S&P 500 Stock Average, 1977–1986

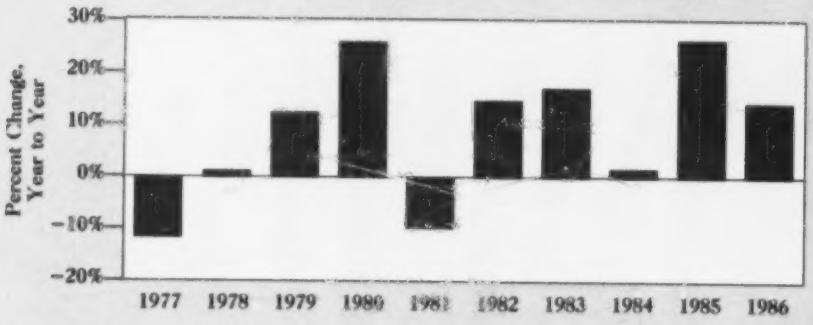
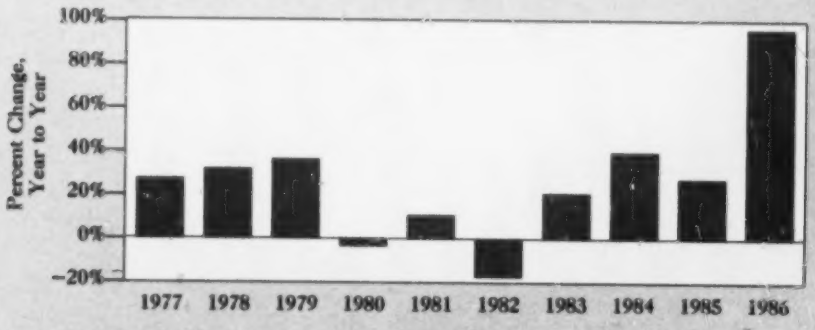


Chart 3: Corporate Capital Gains Realizations, 1977–1986



Note: Percent change calculated from net capital gains taxed at alternative rates. Data are based on corporations with net income minus holding and other investment companies, except bank holding companies.

Sources: Chart 1: Internal Revenue Service, Statistics of Income, *Individual Income Tax Returns*, various issues, Washington, D.C.; Chart 2: Standard and Poor's Composite Index of 500 Stocks; Chart 3: Internal Revenue Service, Statistics of Income, *Corporation Income Tax Returns*, various issues, Washington, D.C. Charts prepared by the American Council for Capital Formation Center for Policy Research, September 1989.

Tax Law Changes Influence Capital Gains More than S&P 500

Individual capital gains realizations appear to be affected more by tax rate changes than by the performance of the stock market (charts 1 and 2). In 1979, individual capital gains realizations rose by almost 70 percent in response to a cut in capital gains taxes from a maximum of 35 percent to 28 percent, which took effect in November 1978. The Standard and Poor average of 500 stocks, in contrast, rose only 12 percent in 1979. Similarly, in 1981, the year in which individual capital gains tax rates declined to a maximum of 20 percent, realizations rose by 5 percent in spite of a 10 percent drop in the S&P average. The prospect of paying capital gains taxes of up to 33 percent in 1987 was apparently enough to cause a surge of sales in 1986 after the passage of the Tax Reform Act of 1986. Individual realizations increased by almost 96 percent as taxpayers rushed to sell assets before the new, higher tax rates took effect in 1987. S&P stock prices, by comparison, rose only 15 percent in 1986.

Corporate capital gains realizations also seem to respond more to tax rate changes than to variations in stock prices (chart 3). The capital gains included in chart 3 are those reported by corporations with net income, exclusive of "pass-through" investment companies whose gains are taxed at individual capital gains rates. The 1979 tax cut was only 2 percentage points, from 30 to 28 percent, but realizations jumped by 37 percent compared to a 12 percent increase in

the S&P 500. Corporate capital gains in 1986 show a strong response to the passage of the 1986 tax act similar to that of individuals. Realizations rose by 95 percent compared to a 15 percent increase in the S&P 500. The data suggest that corporate taxpayers were selling in order to avoid the 34 percent maximum capital gains rate that took effect in 1987.

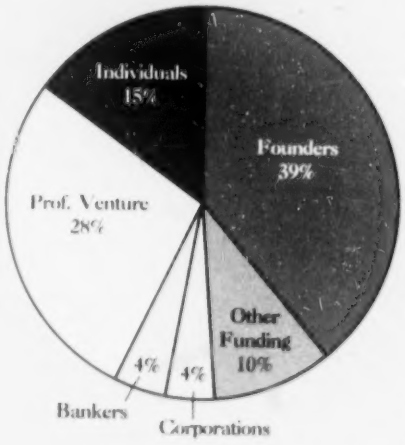
Thus, it seems likely that reductions in current corporate and individual capital gains tax rates could stimulate similar increases in capital gains realizations, thereby creating additional tax revenues.

Taxable Investors Play Large Role in Start-Up Financing

Taxable investors provide the majority of the risk capital for new firms in the start-up period, according to a new survey of young technology companies and their risk capital requirements by the National Venture Capital Association, the American Electronics Association, and Coopers & Lybrand. The survey also shows that these investors are more interested in capital gains than dividends.[1]

Sources of Funding. Coopers & Lybrand (C&L) compiled information provided by 523 firms belonging to the American Electronics Association or the National Venture Capital Association. C&L concluded that the new firms' founders provided 39 percent of the capital during the start-up period; individual investors, 15 percent; and other taxable investors, an additional 18 percent (see chart). Only 28 percent of the capital came from professional venture capitalists.

Individual Investors Critical During Founding Period
(share of total funds)



According to Coopers & Lybrand, capital provided by founders and other individual investors, as well as capital provided by corporations and other investors, is critical to the formation of young growth companies.

These results are consistent with the results of other studies indicating that institutional venture capital firms provide only about 5 percent of the total capital ($60-$80 billion) consumed by young growth companies in the U.S. every year. Since only half of this 5 percent comes from tax-exempt sources, the conclusion is clear. The vast majority of investors who provide the risk capital to invest in America's new technology companies are subject to capital gains taxation, according to C&L.

Importance of Capital Gains to Investors. Investors in start-up companies are seeking capital gains rather than dividends, according to the survey. Dividends paid by companies formed between 1966 and 1985 average in the range of 0–0.4 percent of equity. For companies formed in the second half of this time period, the dividend yield is virtually zero. Even for the oldest group (respondent companies formed between 1966 and 1970), the dividend yield is a minuscule 0.4 percent.

The reasons are straightforward. Growth companies consume significant amounts of capital to finance the asset growth required for revenue and profit growth. While such companies could theoretically pay large dividends, doing so would mean raising more money from capital markets.

As a result, growth companies overwhelmingly retain their earnings within the company to help build their equity and asset base. Then, as the company grows, these retained earnings add to the equity per share and to the value that the shareholder eventually can realize by selling stock for a capital gain.

Implications. The implications of the survey for economic and tax policy are straightforward:

1 The United States must encourage the formation of young companies, which play a critical role in the growth of productivity and jobs in our economy.

2 Policies that stimulate the formation and growth of such companies will pay off rapidly in our economy.

3 Tax policy that reduces the taxation of dividends and short-term capital gains while increasing the taxation of long-term capital gains (such as the Tax Reform Act of 1986) works to the disadvantage of young growth companies.

Concluding that such tax policy has damaged the environment for "the goose that lays golden eggs," the study calls for prompt changes in U.S. economic and tax policy.

[1] "Generating Economic Growth through Young Technology Companies," a survey of young technology companies and their risk capital requirements by the National Venture Capital Association, the American Electronics Association, and Coopers & Lybrand, September 1989.

The ACCF Center for Policy Research is the education and research affiliate of the American Council for Capital Formation. Its mandate is to promote an understanding by the public of the importance of capital formation to the economy. For additional information please contact: ACCF Center for Policy Research, 1850 K Street, N.W., Suite 400, Washington D.C., 20006, (202) 293-5811.

American Council for Capital Formation
Center for Policy Research

December 1989

SPECIAL REPORT

Business Investment and the U.S. Tax Code

by Margo Thorning*

There is increasing evidence that the Tax Reform Act of 1986 (TRA) may well have had a negative impact on the growth of U.S. capital spending. Yet in recent months, a report by Citizens for Tax Justice (CTJ) has attempted to make the case that U.S. investment, especially investment in producers' durable equipment, has "boomed" in spite of the fact that TRA reduced or eliminated several provisions of the tax code that encouraged business investment.[1]

The CTJ study, which focuses on the increase in effective tax rates paid by 250 corporations and calls for even higher corporate taxes, also misses the relevant issue facing tax policymakers. Policymakers today are increasingly concerned that U.S. corporations in all sectors of the economy may not be up to the challenge of competing in the U.S. and world markets. New tax reform initiatives should help reduce the high cost of capital for U.S. business and encourage productive investment of all types rather than impose still higher corporate taxes, as advocated by Citizens for Tax Justice.

The Truth about Business Investment Growth

A recent report by Citizens for Tax Justice (CTJ) states erroneously that "in the years following the passage of the 1981 tax act up to the passage of the 1986 tax reform bill, total real business fixed investment rose at the meager rate of 2.1 percent a year." The CTJ report goes on to say that "in the two years since the passage of tax reform, business investment has risen at a rate of 6.1 percent per year."

The CTJ analysis is erroneous and misleading for three reasons. First, CTJ has made a computational error in its estimate of real pre-TRA business investment growth by analyzing the wrong time period. CTJ's estimate of real, non-residential fixed investment (NRFI) growth in the pre-TRA years *includes data for the year 1986*, an obvious error since the investment tax credit was eliminated for assets placed in service after December 31, 1985. Additional evidence that 1986 was the turning point for capital cost recovery is provided by the fact that taxpayers had the option of using the new, more rapid depreciation schedules for assets placed in service after July 31, 1986. In fact, when analyzed correctly, the annualized growth rate of NRFI rises to 3.5 percent from 1981 to 1985, the appropriate time period for pre-tax-reform analysis.

Second, CTJ apparently ignored readily available investment spending data for the 1986-1989 period. Including the additional data for the first three quarters of 1989 shows that the NRFI growth rate has averaged *only 4.2 percent* in the 1986–1989, period. Thus, the appropriate comparison is between the annual growth rate in pre-tax-reform (1981–1985) NRFI spending—3.5 percent—and post-TRA (1986–1989,) spending growth—4.2 percent—*not 2.1 and 6.1 percent*, as CTJ states.

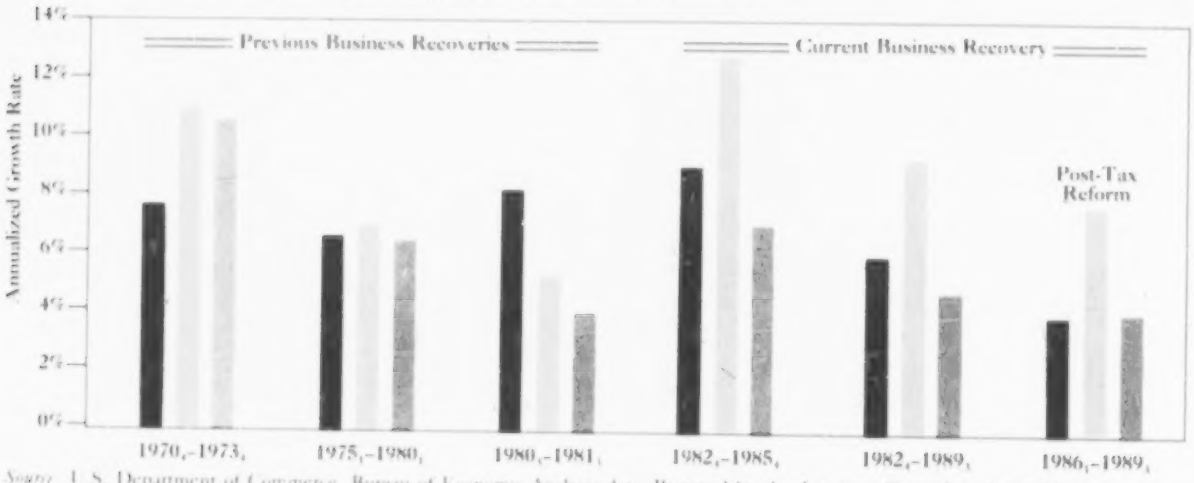
Third, and most important, is the fact that CTJ disregards the investment spending impact of the severe 1981–1982 recession when comparing capital outlays in the pre- and post-TRA periods. Investment spending held up extremely well considering that the United States endured its most severe recession since the 1930s. The severity of the recession is indicated by the 1982 and 1983 unemployment rate of 9.5 percent, a figure unmatched since the depression of the 1930s.

In fact, investment spending since the passage of the 1986 Tax Reform Act has not been as buoyant as in the early part of the expansion that began

* Dr. Margo Thorning is director of research at the ACCF Center for Policy Research.

[1] Citizens for Tax Justice, "The Resurgence of Business Investment and Corporate Income Taxes," October 1989.

Chart 1: Investment Growth During Post-1970 Business Recoveries



Source: U.S. Department of Commerce, Bureau of Economic Analysis data. Prepared by the American Council for Capital Formation Center for Policy Research, December 1989.

Nonresidential Fixed Investment (Structures and Producers' Durable Equipment)

Producers' Durable Equipment

Producers' Durable Equipment Less Computers

in the fourth quarter of 1982 (see Chart 1). Nonresidential fixed investment, which includes both structures and producers' durable equipment (PDE), has grown at a rate of only 4.2 percent, compared to 9.4 percent in the 1982–1985 period (see Table 1). Similarly, since 1986 PDE has grown at only 7.9 percent, compared to 13.3 percent in the pre-tax-reform period. Since 1986, PDE less computers (mainframe and desktop) has grown at only 4.3 percent, while in the early and mid-1980s the rate was 7.4 percent.

The relatively slow growth of investment in the post-tax-reform period is even more surprising in view of the currently high level of capacity utilization in manufacturing, mining, and utilities. Capacity utilization averaged only 78.0 percent from the fourth quarter of 1982 (the beginning of the current business expansion) through the fourth quarter of 1985 (see Table 1). In the post-1986 period, utilization has averaged 81.7 percent. High levels of capacity utilization are usually associated with strong growth in business investment because firms seek to increase capacity during periods of strong demand.

Table 1: Growth in Real Investment and Capacity Utilization Levels During Recent Business Cycles

(percent)

Expansion Phase of Business Cycle[1] (Trough to Peak)	Capacity Utilization[2]	Nonresidential Fixed Investment[3]	Producers' Durable Equipment[3]	Producers' Durable Equipment Less Computers[3]
1970$_1$–1973$_1$	83.2	7.9	11.3	11.0
1975$_1$–1980$_1$	81.2	6.9	7.4	6.8
1980$_1$–1981$_1$	80.4	8.7	5.4	4.3
1982$_4$–1989$_3$[4]	80.0	5.9	9.6	5.0
Pre-Tax-Reform Pattern, 1982$_4$–1985$_4$	78.0	9.4	13.3	7.4
Post-Tax-Reform Pattern, 1986$_1$–1989$_3$	81.7	4.2	7.9	4.3

Source: Federal Reserve Board and U.S. Department of Commerce data. Prepared by the ACCF Center for Policy Research, December 1989.

[1] Business cycle turning points are those determined by the National Bureau of Economic Research.

[2] Average for manufacturing, mining, and utilities.

[3] Annualized growth rate.

[4] The peak in the business expansion which began in November 1982 has not yet occurred.

What Was the Goal of TRA?

CTJ states that the goal of tax reform was to "reduce the dramatic variation in effective rates" among companies which existed prior to tax reform. The report makes much of the fact that the dispersion in effec-

Table 2: Estimated Average Effective Tax Rate on Investment
(percent)

Type of Asset	Prior to TRA	Under TRA	Prior to TRA	Under TRA
Overall Tax Rate on Investment	33.3	36.5		
Owner-occupied housing	22.5	23.7		
	Corporate		Noncorporate	
Equipment	10.0	39.6	11.9	25.4
Structures:				
Nonresidential	34.4	43.1	27.8	31.4
Residential	49.5	52.5	38.2	40.6
Public utility	32.6	44.5	22.1	33.6
Inventories	48.8	45.8	33.0	30.5
Land:				
Nonresidential	50.6	47.8	36.1	33.8
Residential	53.9	51.4	41.4	39.5
Overall within Sector	38.7	44.4	33.2	33.9

Source: *Economic Report of the President*, January 1989 (Washington, D.C.: Government Printing Office), p. 92.

Table 3: Cost of Capital for Tangible and Intangible Assets
(percent)

Asset	Prior Law	Tax Reform Act of 1986	Percent Change from Prior Law
Equipment	5.23	7.25	38.62
Structures	8.47	8.08	4.61
Inventories	9.68	8.06	16.73
	10.04	8.42	16.14
Average for All Tangible Assets	7.52	7.92	5.32
Advertising	4.50	4.50	0.0
R&D Capital	4.50	4.50	0.0
Average for Intangible Assets	4.50	4.50	0.0
Average for All Capital	7.19	7.53	4.73

Source: Don Fullerton and Andrew B. Lyon, "Tax Neutrality and Intangible Capital," National Bureau of Economic Research Working Paper 2430, 1987.

tive rates among the 250 firms in the CTJ sample has lessened since tax reform. In fact, the stated goal of tax reform was "to make the tax treatment of diverse economic activities more even"[2] rather than to equalize tax rates among companies. What in fact happened is best described in the 1989 *Economic Report of the President*. That report notes:

> Under TRA the average effective tax rate on capital increased. *This increase arises mainly because TRA was designed to finance the cut in the personal income tax burden with a rise in the corporate tax burden* [emphasis added]. Despite its reduction in the top statutory corporate tax rate from 46 to 34 percent, TRA's other provisions—such as elimination of the investment tax credit and changes in depreciation rules—offset the reduction in the tax rate and raised the cost of capital on average. Other things equal, the increase in the marginal effective tax rate on capital resulting from the new tax code will act to reduce investment.[3]

The congressional tax-writing committees were attempting to reduce the dispersion in taxes on different types of investment, a goal in which they were partially successful, at least with regard to investments in tangible assets. The average effective tax rate on investment within the corporate sector increased from 38.7 percent prior to tax reform to 44.4 percent after TRA's passage (see Table 2). TRA reduced the variance of effective tax rates on alternative investments by sharply increasing the effective tax rates on investment in equipment (from 10.0 to 39.6 percent) relative to the increase in the effective tax rates on structures, including owner-occupied housing. Effective tax rates on land and inventories have fallen as a result of TRA.

Viewed from a broader perspective, a comparison of the effective tax rate for tangible and intangible investment, TRA was *not* successful in equalizing the tax rates and the cost of capital for different types of

[2] Joint Committee on Taxation, *General Explanation of the Tax Reform Act of 1986* (Washington, D.C.: Government Printing Office, 1987), p. 10.

[3] *Economic Report of the President*, January 1989 (Washington, D.C.: Government Printing Office, 1989), p. 92.

Table 4: U.S. International Ranking[a] of Effective Tax Rates on Investment in Equipment[b]

	Computer Equipment	Mining Equipment	Textile Equipment	Pulp & Paper Equipment	Electric Utility Equipment
Current U.S. Tax Rate	35.3%	37.4%	30.3%	30.3%	58.1%
Prior Law Tax Rate	19.3%	14.5%	10.2%	10.2%	52.1%
Pre-TRA Ranking	2nd	2nd	2nd	2nd	4th
Post-TRA Ranking	8th	9th	9th	9th	12th

Source: KPMG Peat Marwick

[a] The fifteen countries included in the international ranking are United States, Luxembourg, Hong Kong, Spain, Belgium, Canada, Denmark, Italy, United Kingdom, Japan, France, Switzerland, West Germany, South Korea, and Taiwan.

[b] The five types of equipment include those assigned five-, seven-, and twenty-year recovery periods under the Tax Reform Act of 1986. These examples are broadly representative of the majority of equipment used by U.S. industry. Computations assume a 4 percent real rate of return and 4 percent inflation.

investments. As a study by Dr. Don Fullerton of the University of Virginia and Dr. Andrew B. Lyon of the University of Maryland points out,[4] the cost of capital (which is linked closely to the effective tax rate) for equipment, which is a tangible asset, increased as a result of tax reform both in absolute terms and relative to intangible investment. The cost of capital for equipment (defined as the pretax rate of return required by the investor) rose from 5.23 percent under prior law to 7.25 percent under TRA, an increase of 38.6 percent (see Table 3). Thus the cost of capital for equipment is now 60 percent higher than that for intangible capital, rather than only 16 percent higher as under prior law. Capital costs for intangible assets such as R&D and advertising were unchanged because they are expensed (written off immediately) rather than capitalized (depreciated). Had the tax-writing committees not faced the necessity of "paying for" individual tax rate reductions with

Table 5: Saving and Investment as a Percent of Gross Domestic Product, 1973–1987

	United States	Canada	Japan	France	West Germany	United Kingdom
SAVING						
Net Saving[c]	5.0	9.2	18.6	9.0	10.5	5.9
Personal Saving[d]	5.7	7.5	12.9	8.3	8.1	4.7
Gross Saving (net saving plus consumption of fixed capital)[e]	17.7	20.7	31.9	21.2	22.4	17.7
INVESTMENT						
Gross Non-Residential Fixed Capital Formation	13.5	15.7	23.7	14.6	14.6	13.8
Gross Fixed Capital Formation	18.2	21.7	30.0	21.0	20.7	17.5

Source: Derived from National Accounts, Vol. II, 1973–1985 and 1975–1987, Organisation for Economic Co-operation and Development (OECD), 1987 and 1989 eds. Prepared by the American Council for Capital Formation Center for Policy Research, December 1989.

[c] The main components of the OECD definition of net saving are personal saving, business saving (undistributed corporate profits), and government saving (or dissaving). The OECD definition of net saving differs from that used in the National Income and Product Accounts published by the Department of Commerce primarily because of the treatment of government capital formation.

[d] Personal saving is comprised of household saving and private unincorporated enterprise.

[e] This percentage is for the years 1973–1986.

[f] The main components of the OECD definition of consumption of fixed capital are the capital consumption allowances (depreciation charges) for both the private and the government sector.

[4] Don Fullerton and Andrew B. Lyon, "Tax Neutrality and Intangible Capital," National Bureau of Economic Research Working Paper 2430, 1987.

corporate tax increases, they could have moved toward equalizing effective rates on alternative investments in tangible assets by *reducing* the rates on structures and inventories rather than by *increasing* the rate on equipment.

What Should Be the Goals of Tax Reform?

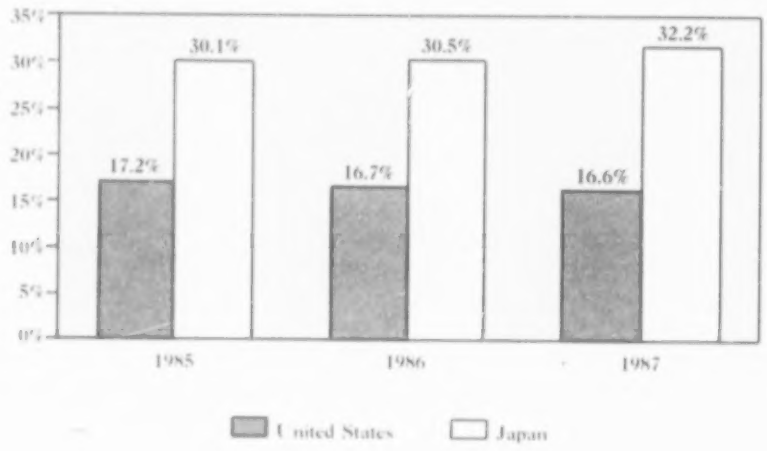
Future tax reform should move in the direction of enhancing individual and business saving and investment incentives, rather than raising corporate taxes, as CTJ advocates. For example, CTJ calls for the elimination of the accelerated cost recovery system and the use of straight-line depreciation. Such a move would put the U.S. capital cost recovery system at the bottom of the list among major industrial countries. The Tax Reform Act of 1986 was responsible for the U.S. dropping from second for most types of industrial equipment to the middle or below among fifteen industrialized countries (see Table 4).

Further corporate tax increases would make it even harder for the United States to increase the share of gross domestic product (GDP) devoted to saving and investment. From 1973 to 1987, saving and investment as a percent of GDP has been lower for the U.S. than for any of our major competitors with the exception of the United Kingdom (see Table 5).

Japan's lead in saving and investment is further highlighted by a comparison of saving and investment over the 1985–1987 period. Japan is investing an increasing share of its GNP—32.2 percent in 1987—while the U.S. is moving in the opposite direction—down to 16.6 percent in 1987 from 1985 (see Chart 2). Even more disturbing is the fact that Japan, whose GNP is roughly half that of the U.S., is investing more in absolute dollar amounts than is the United States (see Table 6). In 1987, Japan's total fixed investment equaled $767 billion, while the comparable figure for the U.S. was only $749 billion.

Such high levels of Japanese investment are not surprising given Japan's much lower capital costs. New research by Stanford University's Dr. John Shoven shows that for a typical piece of equipment financed with equity and with an assumed five-year life, the cost of capital was 10.4 percent in the U.S. in 1988 compared to Japan's 4.1 percent—a difference of 153 percent.[5] U.S. plants financed with equity face capital costs 147 percent higher than Japanese plants.

Chart 2: Fixed Investment in the United States and Japan as a Percent of GNP



Source: International Bank for Reconstruction and Development, *World Tables: 1988-89* (Baltimore and London: Johns Hopkins University Press, 1989). Prepared by the American Council for Capital Formation Center for Policy Research, December 1989.

Note: Fixed investment is defined as additions of new and imported durable goods.

Table 6: GNP Components for Japan and the U.S.
(billions of current U.S. dollars)

	Japan			United States		
	1985	1986	1987	1985	1986	1987
Gross National Product	1,331	1,966	2,385	4,015	4,240	4,527
Gross Fixed Investment	401	589	767	690	707	749
Gross National Saving	443	659	809	602	594	620

Source: International Bank for Reconstruction and Development, *World Tables: 1988-89* (Baltimore and London: Johns Hopkins University Press, 1989). Prepared by the American Council for Capital Formation Center for Policy Research, December 1989.

[5] John B. Shoven, "Consumption Taxes vs. Income Taxes for Deficit Reduction and Tax Restructuring," prepared for "Saving: The Challenge for the U.S. Economy," a symposium sponsored by the American Council for Capital Formation Center for Policy Research, October 1989.

Debt-financed investments in the United States also face substantially higher capital costs than in Japan.

Conclusions

Reports such as that by CTJ—which misuse economic data to support apparently predetermined conclusions and contain major computational errors[*]—do a disservice by shifting the focus from the goal that U.S. tax policy should be striving to achieve. It seems likely that increases in the effective tax rate and the cost of capital for equipment have depressed U.S. investment spending below what it would have been in the absence of TRA.

In the opinion of many tax policy experts, future tax code revisions should reduce the U.S. cost of capital in order to help U.S. firms compete both at home and abroad. Moving toward expensing for *all* types of investment (rather than just for R&D, advertising, and marketing), reducing the capital gains tax, integrating corporate and individual taxes, and substituting a broad-based tax on consumption for part of the corporate tax, all would be positive steps to reduce U.S. capital costs and encourage lagging U.S. investment.

[*] Examples of such errors include erroneous estimates of investment growth rates in the pre- and post-TRA time periods, and counting the sale of safe harbor leasing benefits or a tax reduction for both *buyers* and *sellers*.

The ACCF Center for Policy Research is the education and research affiliate of the American Council for Capital Formation. Its mandate is to promote an understanding by the public of the importance of capital formation to the economy. For additional information please contact: ACCF Center for Policy Research, 1850 K Street, N.W., Suite 400, Washington D.C., 20006, (202) 293-5811.

K1310-1.4F

American Council for Capital Formation
Center for Policy Research

January 1990

SPECIAL REPORT

Update on the U.S. Cost of Capital

by Margo Thorning*

A Special Report *published by the ACCF Center for Policy Research in June 1989 documented that U.S. capital costs are high compared to those of our major international competitors. This* Special Report *updates that earlier report by providing new estimates of the cost of capital in the United States and in Japan. It also describes the effect of recent tax policy changes on the cost of capital for new, high-tech U.S. firms.*

What Is the Cost of Capital?

The cost of capital is the pretax return on a new investment needed to cover the purchase price of the asset, the market rate of interest, inflation, taxes, and the return required by the investor.[1] Capital costs are an important factor in determining which investments firms will make. High capital costs mean that only those projects with the greatest expected return will be undertaken because they will yield a return large enough to satisfy investors, resulting in less overall investment.

Why U.S. Capital Costs Are High

International comparisons based on the traditional, pretax return concept show that U.S. capital costs are approximately twice those of Japan, 60 percent higher than the United Kingdom's, and 30 percent higher than those of West Germany. Experts conclude that the current, high U.S. capital costs are due to three primary factors: (1) high interest rates; (2) the lack of indexing of depreciation allowances for inflation; and (3) federal tax code changes since 1982.

- *Capital Costs, Risk, and Interest Rates.* New research by Stanford University Professor John B. Shoven indicates that the U.S. cost of capital is higher than previously estimated. Professor Shoven's study[2] is a step forward in capital cost analysis because he incorporates a measure of

Chart 1: Cost of Equity Capital for Autos

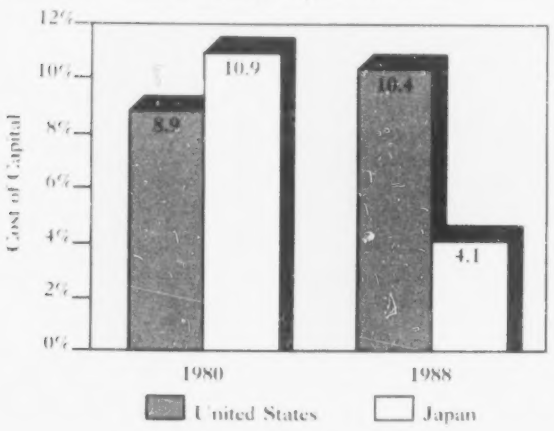
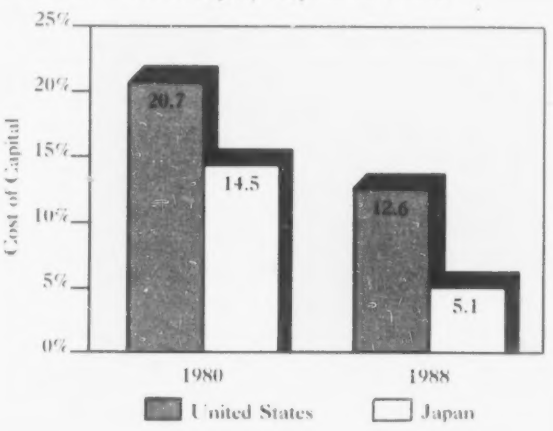


Chart 2: Cost of Equity Capital for Plants



* Dr. Margo Thorning is director of research at the ACCF Center for Policy Research.

[1] Another frequently used measure is the user cost of capital—often called the "hurdle rate" because it measures the return an investment must yield before a firm would be willing to undertake the capital expenditure. For example, for a typical manufacturing firm to be willing to purchase a new piece of equipment given current tax law and economic conditions, the asset would have to yield an annual return of approximately 25 percent. This yield would cover all costs, including the purchase price of the equipment, real (economic) depreciation, financing costs, and taxes. The only difference between the user cost (or "hurdle rate") and the pretax return measure is that the former includes economic depreciation (about 15 percent per year for equipment, for example). Economic depreciation, which measures the actual useful life of an asset, does not vary with the tax code.

Chart 3: Cost of Debt Capital for Autos

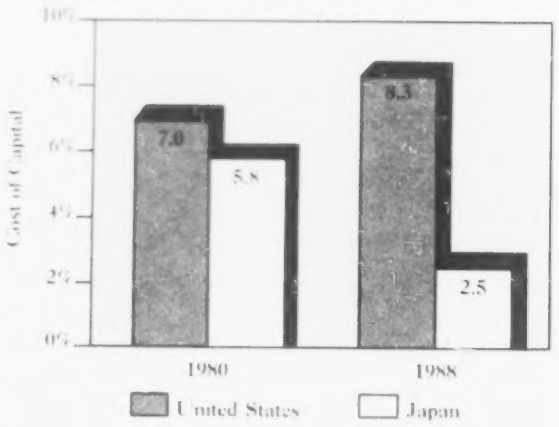
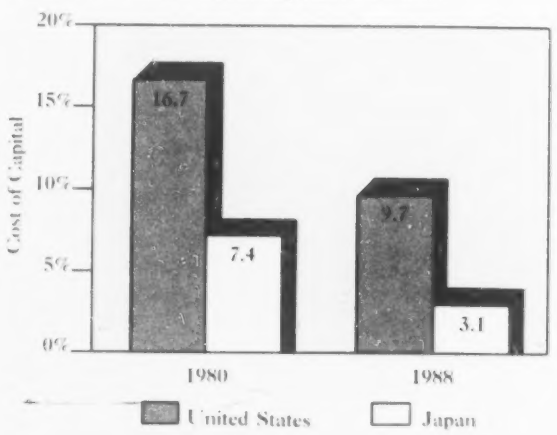


Chart 4: Cost of Debt Capital for Plants



the risk premium actually demanded by investors in the traditional pretax return measure, whereas previous studies used the unrealistic assumption that the risk premium could be measured by the real interest rate on safe, short-term government bonds. Using his more realistic measure of the pretax return required by investors, Dr. Shoven concludes that the U.S. cost of capital is significantly higher than that of Japan and that the U.S. tax system discriminates against risky investments.

In his analysis, Professor Shoven measured the cost of capital for an asset with an assumed 5-year life (an automobile) and with a 31.5-year life (a plant) for the years 1980 and 1988 in both the United States and Japan (see Charts 1 and 2). He found that the cost of capital for equity-financed automobiles in 1988 was 10.4 percent in the United States compared to Japan's 4.1 percent, a difference of 153 percent; U.S. plants financed with equity faced capital costs 147 percent higher than Japanese plants.

Debt-financed investments in the United States also incur substantially higher capital costs than in Japan, according to Dr. Shoven's research. Capital costs for U.S. investments in autos using debt financing are 232 percent higher and in plants are 212 percent higher than comparable investments in Japan (see Charts 3 and 4). Dr. Shoven concludes that the U.S. tax system affects the cost of capital far more than previously recognized.

Dr. Shoven indicates that the interaction between high U.S. nominal interest rates and depreciation allowances may explain a substantial portion of the observed differences between U.S. and Japanese capital costs. For example, with a zero nominal interest rate, depreciation deductions, even if spread over thirty years, are equivalent to expensing; corporate taxes therefore do not affect capital costs. With a 10 percent interest rate, however, deductions occurring more than, say, fifteen years in the future are worth no more than twenty cents on the dollar. This means that the present value of the taxes saved with the depreciation deductions is not large enough to permit full recovery of costs, thus raising the cost of capital. The crucial importance of the nominal interest rate may explain why Japan's corporate income tax has a smaller effect on capital costs than does the U.S. corporate income tax.

- *Capital Costs and Tax Policy.* Changes in tax law subsequent to the passage of the 1981 Economic Recovery Tax Act (ERTA) have increased both the pretax return required by investors and the hurdle rate a firm's projects must meet. Capital costs of investment in equipment (using the pretax return measure), for example, have risen almost 90 percent since 1982 (see Chart 5).

The effective tax rate on new investment reflects the cost of capital. After the passage of ERTA in 1981, the effective tax rate on equipment approximated theoretical expensing; by 1986, when the Tax Reform Act (TRA) was enacted, the rate increased to 46.3 percent, which exceeds the statutory tax rate of 34 percent (see Chart 6). The loss of the investment tax credit and the lack of inflation indexing for depreciation are the major reasons why the effective tax rate exceeds the statutory rate.

Research by Dr. Yolanda Henderson, an economist with the Federal Reserve Bank of Boston, also leads her

[2] John B. Shoven, "Consumption Taxes vs. Income Taxes for Deficit Reduction and Tax Restructuring," prepared for "Saving: The Challenge for the U.S. Economy," a symposium sponsored by the American Council for Capital Formation Center for Policy Research, October 1989.

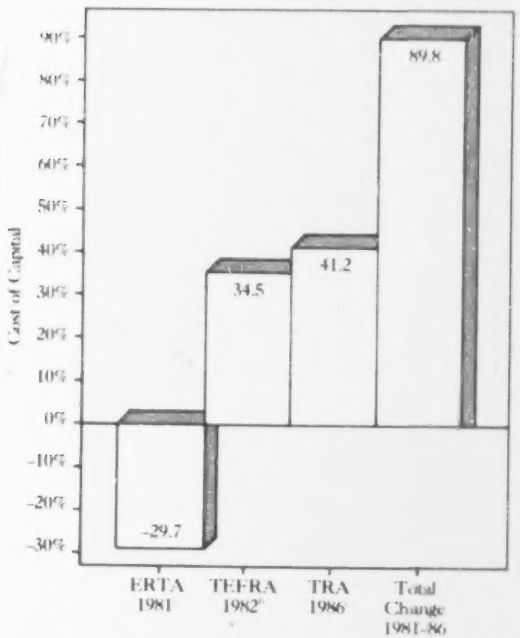
to conclude that the Tax Reform Act of 1986 significantly increased the U.S. cost of capital.[5] Dr. Henderson further concludes that the required pretax return would have risen only half as much as it did if the capital gains tax rate had not been raised in 1986. Higher capital gains taxes mean that for any given after-tax rate of return required by investors, the pretax return must be larger; thus, the cost of capital firms face is higher.

Effect of the U.S. Tax Code on Small, High-Tech Firms

Dr. Henderson also observes that TRA, by eliminating the capital gains differential, exacerbated the tax differential between corporate equity and debt, thus making the use of debt even more advantageous than before. Her research indicates that small firms, particularly high-tech companies, have limited access to debt, in contrast to larger firms. For example, long-term debt-to-equity ratios for mature corporations average 42 percent in manufacturing and 107 percent in services, with other industries falling in between (see Table 1). The mean ratios for emerging companies are typically higher (except for services) but are distorted upward not only by selected companies with high use of debt but also by those with very low values of shareholders' equity as a result of operating losses in early years.

The median values of debt-to-equity, which mark the division between the bottom and top halves of the sample, are a better indicator for the typical emerging company in each industry. These median values confirm the findings of low usage of debt: The ratio is 20 percent in manufacturing and 16 percent in services. The median debt-equity ratio of high-tech service firms is only 13.5 percent. Henderson suggests that the use of specialized equipment such as computers or medical equipment or other assets not suitable for collateral may contribute

Chart 5: Impact of U.S. Tax Code Revisions on the Cost of Capital for Equipment Used in Manufacturing (Pretax Return Basis)



Source: Congressional Research Service, Library of Congress, "Effects of Alternative Tax Regimes on the Cost of Capital for Selected Types of Equipment," February 1989 (unpublished). Chart prepared by the American Council for Capital Formation.

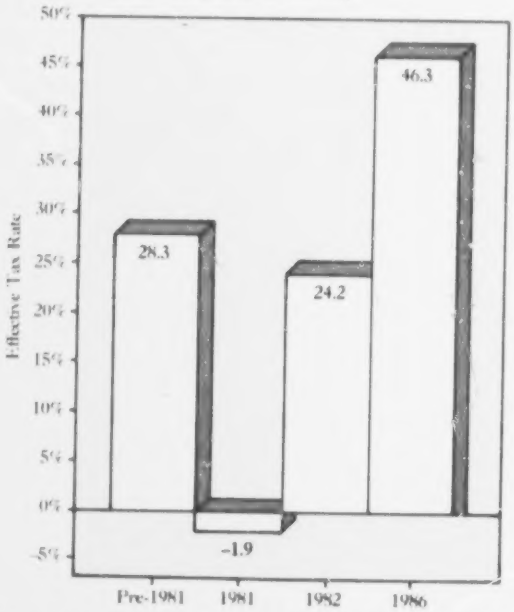
Note: The capital cost used here is the pretax return required by an investor, which is net of economic depreciation.

*The Economic Recovery Tax Act of 1981 (ERTA) reduced rates compared to prior law.

†The Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) reduced ERTA's investment incentives.

‡The Tax Reform Act of 1986 (TRA) further reduced the investment incentives available under TEFRA and raised effective tax rates to a level higher than that prevailing in 1980.

Chart 6: Effective Tax Rates on Equipment Used in Manufacturing



Source: Congressional Research Service, Library of Congress, "Effects of Alternative Tax Regimes on the Cost of Capital for Selected Types of Equipment," February 1989 (unpublished). Chart prepared by the American Council for Capital Formation.

[5] Yolanda K. Henderson, "Capital Gains Taxation and the Cost of Capital for Mature and Emerging Corporations," prepared for "Saving: The Challenge for the U.S. Economy."

Table 1: Long-Term Debt-to-Equity Ratios for Mature and Emerging Corporations by Industry, 1986[a]
(Percent)

	Mature	Emerging		Sample Size (Number of Companies)	
		Mean	Median	Mature	Emerging
Total Nonfinancial	58.6	122.5	22.2	422	210
Manufacturing	42.4	115.3	20.1	245	86
Food and Tobacco	62.3	86.1	17.3	93	5
Chemicals	43.4	64.7	2.3	137	10
Industrial and Computing Equipment	30.1	37.9	9.3	224	8
Electronic Equipment	26.8	39.8	16.7	123	17
Measuring Instruments	25.9	91.5	5.1	99	9
Miscellaneous Manufacturing	48.5	112.6	2.8	41	7
All Other Manufacturing	47.8	213.3	49.6	528	30
High-Technology Industries[b]	n.a.	43.9	6.1	n.a.	37
Non High-Technology Industries	n.a.	165.1	43.7	n.a.	53
Transportation, Communication, Utilities	82.6	241.9	80.5	370	21
Wholesale Trade	67.6	348.4	39.2	153	14
Retail Trade	76.5	89.2	43.6	291	26
Services	106.8	42.9	16.3	249	60
Technology-Oriented Industries[c]	n.a.	39.6	13.5	n.a.	40
Non Technology-Oriented Industries	n.a.	49.3	19.4	n.a.	20

Source: Compustat Industry Aggregate Database and *Going Public: The IPO Reporter.*

[a] For mature corporations, the ratios are value-weighted means. Bernanke and Campbell (1988) indicate that means and medians are similar in the Compustat sample. For emerging corporations, they are means and medians of ratios for individual companies averaged before and after their initial public stock offering. Observations are omitted if equity is negative. Individual industries are shown separately if there are at least six observations of companies going public in 1986. All ratios are book values.

[b] SIC codes 283 (drugs), 286 (industrial organic chemicals), 357 (office and computing equipment), 366 (communications equipment), 367 (electronic components), 372 (aircraft), 376 (missiles), 380 (instruments). Definition from U.S. Congressional Budget Office (1985).

[c] SIC codes 737 (computers and data processing), 7389–7399 (business services), 805–807 (health services), 8731 (commercial physical research), 8734 (testing laboratories).

to low debt ratios in the high-tech sector. Except for transportation, communication, and utilities and the category of all other manufacturing—industries not shown separately because of low instances of initial public offerings—the debt-equity ratios are substantially below those measured for mature industries.

The accessibility of long-term debt is important for the analysis of the cost of fixed capital, such as plant and machinery. Because these assets have relatively long lives, risk-averse firms are unlikely to finance them with short-term loans that must be renegotiated each year. The relevant choice is between long-term debt and equity.

Any increase in the cost of equity funds is likely to impose a disproportionate burden on emerging corporations, discouraging their growth, Henderson observes. The typical young corporation finances a lower proportion of its assets by issuing debt and has a lower debt-to-equity ratio than does the typical mature corporation. This comparison is especially sharp in the services sector. Technology-oriented companies also have particularly low access to debt.

Although economists disagree on exactly how capital gains taxes and dividend taxes affect the cost of equity, and therefore on whether equity is more expensive for emerging than for mature corporations, they generally recognize capital gains taxes as a significant element of this cost. Furthermore, Dr. Henderson notes, recent research indicates that a lack of internally generated funds serves as a constraint on investment beyond what an

analysis based solely on tax policy would indicate. The need of young corporations to issue new shares hampers their capital expansion plans.

The cost of funds—both equity and debt—depends on whether investors and creditors are subject to taxation on their income. Mature corporations have relatively greater access to untaxed institutional investors such as pension funds and therefore can afford to undertake investments with pretax returns lower than those undertaken by emerging corporations. Investors in young corporations are more likely to be individuals subject to capital gains taxes.

Dr. Henderson concludes that the additional cost of equity funds caused by the increased capital gains tax rates of TRA imposes a disproportionate burden on new companies. Lower availability of debt, all else being equal, means that emerging corporations face a higher cost of capital because of their inability to take advantage of tax incentives for this form of finance. Many experts believe that new, technology-oriented companies are important for international competitiveness, both because of their own potential for growth and because of the spillover benefits of their research for other sectors.

Conclusions

Reducing the U.S. cost of capital, which is vital to investment and productivity growth, can be accomplished in several ways. First, lower interest rates would have a positive effect. Reduction of the federal deficit would be beneficial in this respect. Second, helpful changes in federal tax policy include: (1) expensing for all types of investment, (2) indexing both depreciation allowances and interest income and expense for inflation, (3) reducing capital gains taxes, and (4) integrating the corporate and personal income tax systems.

The ACCF Center for Policy Research is the education and research affiliate of the American Council for Capital Formation. Its mandate is to promote an understanding by the public of the importance of capital formation to the economy. For additional information please contact: ACCF Center for Policy Research, 1850 K Street, N.W., Suite 400, Washington D.C., 20006, (202) 293-5811.

A1310-1.5 F

American Council for Capital Formation
Center for Policy Research

January 1990

SPECIAL REPORT

Bush Administration Focuses on U.S. Saving Rate

In late 1988, the American Council for Capital Formation Center for Policy Research launched a three-year "Project on Public Policy Options to Increase U.S. National Saving"—an intensive examination of the dangerously low U.S. saving rate, its economic consequences, and public policy options to reverse the situation. In October 1989, as part of this project, the Center sponsored a widely acclaimed two-and-one-half-day symposium, "Saving: The Challenge for the U.S. Economy," which brought together key policymakers from the administration and Congress, top academic economists, and business leaders for a discussion of this critical problem. A hardback volume consisting of updated versions of the conference papers, panelists' responses, and keynote addresses will appear this fall.

The ACCF Center for Policy Research therefore is pleased that a major section of the FY1991 federal budget proposed by President Bush—entitled "Increasing Saving, Investment and Productivity"—focuses on the urgent need to raise the U.S. saving rate. This Special Report *excerpts portions from that section of the FY 1991 budget.*

Importance of Saving

Without saving, the Bush administration observes in its 1991 budget, no resources would be available for investment. Someone must forego additional current consumption in order for investment plans to be realized. Ultimately, the rate of capital formation and the benefits that flow from more investment depend on the willingness to save. Saving and investment are linked by the cost of capital, which serves as a rationing mechanism to limit total investment to the resources made available by saving. In a closed economy, where investors are unable to borrow from abroad, a low saving rate is reflected in a high cost of capital. In an open economy, where domestic investors can borrow from foreign savers, domestic saving is no longer the sole constraint on investment.

The global integration of financial markets has cushioned U.S. domestic investment partially from the effects of a sharp decline in the domestic saving rate in the 1980s. Foreign capital inflows have helped to sustain U.S. economic growth. However, borrowing from abroad is a second-best solution in comparison with increasing domestic saving. When foreign savers provide capital, the future interest and dividend returns flow abroad rather than providing income for Americans.

Trends in U.S. Domestic Saving

Gross domestic saving averaged 16.5 percent of GNP during the 1960s and 1970s, and then fell by more than 2 percentage points to 14.1 percent in the 1980s (see Table 1). This decrease reflected both a widening of the federal budget deficit and a marked decline in personal saving. State and local governments ran surpluses and thus helped to cushion the decline in the gross domestic saving rate; this, however, was largely due to their growing pension fund reserves associated with future pension

Table 1: U.S. Gross Domestic Saving
(As Percent of GNP)

	Gross Domestic Saving	= Personal Saving	+ Business Saving	+ Federal Saving	+ State and Local Saving
1960–69	16.3	4.6	11.9	−0.3	—
1970–79	16.7	5.6	12.0	−1.7	0.8
1980–89	14.1	3.8	12.8	−3.8	1.3
1980–85	14.9	4.4	13.1	−3.9	1.3
1986	12.4	3.0	12.9	−4.9	1.5
1987	12.2	2.2	12.4	−3.6	1.1
1988	13.2	3.0	12.2	−3.0	1.0
1989: Q1–Q3	13.5	3.9	11.5	−2.8	0.9

Source: Budget of the United States Government, Fiscal Year 1991 (Washington, D.C.: U.S. Government Printing Office, January 1990), p. 40.

liabilities. Gross business saving—the sum of undistributed corporate profits and business depreciation allowances—averaged 12.8 percent of GNP in the 1980s, slightly higher than in the prior two decades.

Net domestic saving, which deducts depreciation from gross saving, is considered by many experts to be a more accurate barometer of an economy's viability. This measure showed a proportionately greater decline than did gross saving, falling from an average of 8.2 percent of NNP (net national product) during the 1960s and 1970s to 3.4 percent in the 1980s (see Table 2). Two-thirds of this decline was due to the deepening federal deficit; the remainder was equally divided between a decline in personal and in business saving. Gross business saving has been sustained by the substantial increase in depreciation allowances due to the shift to short-lived capital goods. Net business saving—retained earnings—has been on a downtrend.

Personal Saving. In the 1980s, personal saving declined to a particularly low level despite favorable tax changes and high real interest rates, which should have encouraged saving. Personal saving fell by all official measures, decreasing from 7.0 percent of disposable income in the 1960s and 1970s to 5.4 percent in the 1980s, although the decline was greater as measured in the national income and product accounts (NIPA) than in the flow of funds accounts (FOF), which include purchases of consumer durables in their definition of personal saving (see Figure 1).[1]

In some ways, the 1980s offered a favorable climate for saving. The 1981 Economic Recovery Tax Act reduced taxes on saving by lowering marginal tax rates for the first time in almost two decades. The 1986 Tax Reform Act lowered the top marginal tax rate from 50 percent to 33 percent and phased out the tax deductions for most consumer interest expenses. Furthermore, real interest rates were high. These developments should have been conducive to a higher rate of personal saving.

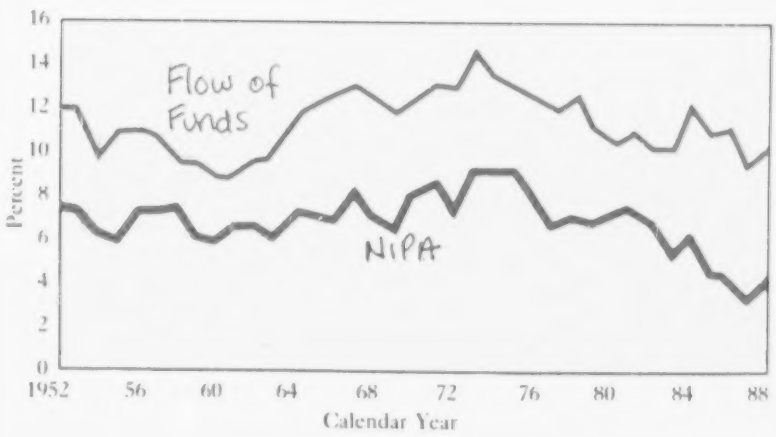
Other factors were evidently at work. In part, lower personal saving in the 1980s reflected a demographic phenomenon—the entrance of the

Table 2: **U.S. Net Domestic Saving**
(As Percent of NNP)

	Net Domestic Saving	= Personal Saving	+ Net Business Saving	+ Federal Saving	+ State and Local Saving
1960–69	8.6	5.1	3.8	−0.3	—
1970–79	7.9	6.2	2.7	−1.9	0.9
1980–89	3.4	4.3	1.9	−4.3	1.4
1980–85	4.0	5.0	1.9	−4.4	1.5
1986	1.7	3.3	2.2	−5.5	1.7
1987	1.7	2.5	1.9	−4.0	1.3
1988	2.9	3.3	1.8	−3.3	1.1
1989: Q1–Q3	3.3	4.3	1.1	−3.1	1.0

Source: Budget of the United States Government, Fiscal Year 1991 (Washington, D.C.: U.S. Government Printing Office, January 1990), p. 40.

Figure 1: **U.S. Personal Saving Rates**
(As Percent of Disposable Income)



Source: Budget of the United States Government, Fiscal Year 1991 (Washington, D.C.: U.S. Government Printing Office, January 1990), p. 42.

[1] Both measures of saving reflect new purchases of housing (housing purchases are classified as investment, not consumption, so they are automatically included in saving, which is defined in both sets of accounts as the difference between income and consumption). Neither measure of saving, however, reflects the revaluation of housing or other assets, so if existing houses become more valuable, the increase in wealth that this represents is not included in saving. In principle, asset revaluations should be reflected in the saving rate, but accurately measuring such capital gains presents practical difficulties.

baby-boom generation into the prime buying and borrowing phase of their lives. This increased the demand for cars and home appliances.

Another important reason for the decline in the personal saving rate was undoubtedly the increase in the value of household wealth. Since 1982, household financial assets have been substantially revalued by the surge in stock and bond prices. In the 1970s, and to a lesser extent in the 1980s, rising home prices had a similar effect on household wealth. Neither the NIPA nor the FOF saving measure takes account of the appreciation in asset values. But for individuals, higher prices for the assets they own, including their homes, are financially equivalent to new saving.

Employers' contributions to pensions are included in personal income and saving. Such contributions grew rapidly during the 1980s, partly because many private pensions were not adequately funded. Statutory changes required a higher degree of funding, which raised personal income, saving, and the saving rate. But in the 1980s, with the boom in stock prices, employers' contributions to pension plans were scaled back considerably, lowering the measured personal saving rate but adding to business saving.

Both the retirement income and the reduction in uncertainty provided by Social Security (which not only provides income during retirement, but also protects against both inflation and the "risk" of very long life) diminish the need for personal saving. On the other hand, to the extent that the Social Security program encourages people to plan an earlier retirement, it increases the incentive for personal saving. On balance, Social Security has probably reduced personal saving. Since there has been no corresponding increase in saving by the federal government, total domestic saving has probably been lower over the years than it would have been in the absence of Social Security, although the statistical evidence is not conclusive.

To the extent that demographic factors were responsible for the decline in personal saving in the 1980s, there is reason to expect that saving may recover somewhat in the 1990s. These should be high-earning years for the baby-boom generation as they enter their forties and fifties. If they follow the pattern of earlier generations, these will also be their high-saving years as they prepare for retirement in the next century. But relying on demographic developments alone to raise the saving rate would be unwise.

Federal Dissaving. The federal government has run a budget deficit for most of the past sixty years. In 1979, at the end of the business expansion of the late 1970s, the deficit had fallen to less than 2 percent of GNP. Over the next four years, it rose, reaching 6.3 percent of GNP in 1983. The deficit was pushed up initially by the two business recessions at the beginning of the decade, but when the economy began to recover, the deficit was slow to decline. In 1987 the deficit began to show a significant decline, and by 1989 it had dropped to just under 3 percent of GNP. But this still represents substantial federal dissaving, especially coming after a lengthy period of economic growth. Borrowing to finance the deficit, in effect, "uses up" part of the limited supply of private saving.

Federal dissaving, combined with the decline in private saving, has had significant economic consequences. High rates of interest kept the cost of capital high, diminishing domestic investment, slowing the growth of the capital stock, and, ultimately, lowering the future path of GNP. These effects have occurred despite a massive inflow of foreign saving (discussed below), though the importation of saving mitigated the effect on investment. With the need to expand potential capacity and to increase domestic saving so evident, federal deficit reduction is imperative.

Role of Foreign Saving in Maintaining U.S. Investment

The U.S. current account deficit widened from a small deficit of $7.0 billion in 1982 to a record deficit of $143.7 billion in 1987. It narrowed in the past two years, reaching an annual rate of $113.5 billion in the first three quarters of 1989. The counterpart to our current account deficit is a capital account surplus represented by foreign capital inflows, or foreign

Table 3: Sources of U.S. Net Investment
(As Percent of GNP)

	U.S. Net Domestic Saving	+	Inflow of Foreign Saving	=	Net Private Domestic Investment
1960–69	7.7		−0.6		7.1
1970–79	7.1		−0.2		6.8
1980–89	3.0		1.6		4.6
1980–85	3.6		0.9		4.5
1986	1.5		3.2		4.7
1987	1.4		3.3		4.7
1988	2.4		2.4		4.9
1989: Q1–Q3	2.5		1.9		4.4

Source: Budget of the United States Government, Fiscal Year 1991 (Washington, D.C.: U.S. Government Printing Office, January 1990), p. 43.

investment in the United States.

International capital markets channel resources from countries with excess domestic saving over investment (e.g., Japan) to those where domestic saving is low relative to domestic investment. Given the sharp decline in U.S. net domestic saving, private investment would have fallen much more than it did if capital had not flowed in from abroad (see Table 3).

Although it is possible for a country to run a current account deficit for as long as foreigners are willing to add to their net holdings of its assets, there is a tendency over time for such imbalances to be corrected. Eventually, the United States' reliance on foreign capital will decline. When that happens, the United States will have to increase its export earnings to service the capital it has borrowed abroad. During the transition to a higher level of net exports, either consumption or domestic investment will have to grow more slowly than total national output. The best way to manage this transition would be to increase domestic saving by both government and the private sector. That would have the advantage of cushioning domestic investment while voluntarily slowing the growth of consumption.

Table 4: Net Saving Rates by Sector, 1980–87
(Net Saving as Percent of Net National Income)

	Total	Government*	Households	Enterprises
Japan	20.3	4.1	13.5	2.7
Italy	12.8	N.A.	N.A.	N.A.
Germany	10.8	1.4	8.9	0.5
Canada	9.9	−3.9	9.7	4.1
France	8.6	N.A.	N.A.	N.A.
United Kingdom	6.3	−1.6	5.0	3.4
United States	4.2	−3.9	6.2	2.0
U.S. ranking	7/7	4/5	4/5	4/5

Source: Budget of the United States Government, Fiscal Year 1991 (Washington, D.C.: U.S. Government Printing Office, January 1990), p. 44.
*Includes some public physical capital investment as saving. N.A.: Not available.

Table 5: Personal Saving Rates: 1981–86
(As Percent of Disposable Income)

	Gross Saving	Including Consumer Durables	Including Saving of Social Security	Adjusted for Private Pensions, Life Insurance	Including Inflation Gains or Losses
United States	13.2	22.5	12.8	7.8	9.9
Italy	24.4	31.9	24.7	23.3	12.0
Japan	21.6	26.1	24.6	18.3	19.7
Canada	18.7	30.1	19.6	14.0	13.9
France	15.6	22.7	16.1	14.6	12.0
Finland	12.1	21.5	12.0	N.A.	N.A.
United Kingdom	10.7	19.2	10.7	2.7	8.4
Sweden	6.3	14.8	10.8	4.3	N.A.
U.S. ranking	5/8	5/8	5/8	5/7	5/6

Source: Budget of the United States Government, Fiscal Year 1991 (Washington, D.C.: U.S. Government Printing Office, January 1990), p. 44.
N.A.: Not available.

International Saving Comparisons

The U.S. national saving rate has ranked near the bottom among the major industrial countries throughout the postwar period (see Table 4). The rate of general government saving in the United States also ranks low. Personal saving is considerably lower than in other countries, even after adjustments are made for differences in definition (see Table 5). The gap is particularly wide when comparing U.S. saving rates—both the national rate and the personal rate—with those of Japan and Germany.

In the international system of national accounts on which these comparisons are based, some public physical capital formation is treated as saving. This is especially important in the comparison between the United States and Japan. The Japanese government invests approximately 6.7 percent of Japanese GNP in public nonmilitary capital. The United States invests only about 2.1 percent of GNP.

If the comparisons were made using the United States' national income definitions, which exclude public capital formation from net saving, the United States and Japanese saving rates would be much closer. Indeed, if the Japanese had measured depreciation as the United States does, the two countries' net saving rates would have approached one another in the late 1970s. Nonetheless, even on this basis, a large difference between the United States and the Japanese saving rates persisted throughout the 1980s due to the higher personal saving of Japanese households and the widening of the U.S. government's budget deficit at time when the Japanese budget deficit was declining (see Table 5).

Although the gap between U.S. and foreign private saving rates cannot be fully explained, several features of our tax code make saving more costly and borrowing cheaper in the United States. The U.S. statutory capital gains tax rate is higher than that of the other industrial countries, with the exception of Australia and the United Kingdom, both of which, however, index long-term capital gains. Indexing reduces the effective tax rate on real capital gains compared with the United States.

Interest income is fully taxed in the United States, and dividends from equity holdings are taxed at both the individual and the corporate level, a less advantageous treatment than is typically available elsewhere. For example, Japan has historically allowed most interest income to escape taxation.

It is instructive to compare the U.S. saving rate with that of Canada because the two countries are closely linked geographically, economically, and culturally. For most of the postwar period, the rate of household saving in Canada fell short of that in the United States, but in the 1980s it leaped ahead when significant differences emerged in the way the two countries tax saving. Canada indexes capital gains before taxes, which effectively lowers the rate of tax on real capital gains compared to the United States. Moreover, since the early 1970s, Canada has allowed even more generous tax deductions for retirement saving plans than the deductible IRA plan that was in effect between 1982 and 1986 in the United States. The shift in the two countries' relative saving behavior began at about the time when Canada introduced these new saving vehicles.

Policy Prescriptions

The administration's legislative initiative consists of three parts: a Family Savings Account, capital gains tax reductions, and a home ownership initiative. The revenue effects of these proposals are shown in Table 6.

Table 6: Revenue Effects of The Savings and Economic Growth Act, FY 1990 to FY 1995
(billions of dollars)

	Fiscal Years						
	1990	1991	1992	1993	1994	1995	1990–1995
Family savings account	*	−0.2	−0.6	−1.0	−1.3	−1.6	−4.7
Capital gains tax rate reduction	0.5	4.9	2.8	1.2	1.7	1.4	12.5
Penalty-free IRA withdrawals for first-time home buyers	−*	−*	−0.1	−0.1	−0.1	−0.1	−0.4
Total	0.5	4.7	2.1	0.1	0.3	−0.3	7.4

Source: General Explanations of the President's Budget Proposals Affecting Receipts (Washington, D.C.: Department of the Treasury, January 1990), pp. 10, 13, and 16.
* Revenue loss of less than $50 million.

- ***Family Savings Account***

A new Family Savings Account (FSA) is proposed to give most Americans an opportunity to save through a simple and understandable tax-free savings incentive program. The Family Savings Account differs from a deductible current-law IRA in two respects: (1) the contributions are not deductible, but (2) if the account is maintained for at least seven years, neither the contributions nor the earnings are taxed when withdrawn. As in the case of IRAs, the income would not be taxed when earned in the FSA. The proposal would allow individuals (other than dependents) to make nondeductible contributions to a FSA of the lesser of $2,500 or the individual's compensation for the year. Contributions would be allowed for single filers with adjusted gross income (AGI) less than $60,000, for heads of households with AGI less than $100,000, and for married taxpayers filing joint returns with AGI less than $120,000. Contributions to FSAs would be allowed in addition to contributions to current-law qualified pension plans, IRAs, 401(k) plans, and other tax-favored forms of saving.

Earnings on contributions retained in the FSA for at least seven years would be eligible for full tax exemption upon withdrawal. However, withdrawals of earnings allocable to contributions retained in the FSA for less than three years would be subject to both a 10 percent excise tax penalty and to income tax. Withdrawals of earnings allocable to contributions retained in the FSA for three to seven years would be subject only to income tax. The effective date would be January 1, 1990.

- ***Capital Gains Tax Reductions***

Under current law, capital gains of individuals are taxed at the same rates as ordinary income. Capital gains are thus generally subject to a 15 percent, 28 percent, or 33 percent marginal tax rate. When capital gains taxes interact with other provisions in the income tax code, such as the floors under itemized deductions for medical and miscellaneous expenses, the phase-out of IRA deductions, and the exclusion of Social Security income, the marginal tax cost of an asset may be even higher in some cases.

American Council for Capital Formation
Center for Policy Research

March 1990

SPECIAL REPORT

Why America Won't Save

by Frank Levy and Richard Michel

In conjunction with its project exploring the causes and consequences of the low U.S. saving rate and policy options to reverse this situation, the ACCF Center for Policy Research offers this Special Report *on the issue of U.S. saving.*

This article first appeared in the Washington Post *("Outlook Section," February 4, 1990).*

"We need to save more," said President Bush in his State of the Union message and he offered a modest "Family Savings Plan," along with his trademark capital-gains tax cut, to foster that result. But the president's plan is likely to be no more effectual than his predecessor's more generous tax and savings incentives because it fails to address the clash of cultural and economic forces at the heart of our savings problem. Specifically, a high-consumption mentality, born of the boom times of the 1950s and 1960s, has carried forward into a period in which limited economic mobility has become the reality for many Americans.

For more than a decade, Americans have been saving at rates low enough to cheat our future. The personal savings rate has recently staged a small recovery, but the national savings rate—persons, business and the government combined—remains at 13 percent of GNP. In the 1950s and 1960s, we saved 16 percent of GNP and international competition has sharply increased our capital needs since then.

For more than a decade, Americans have been saving at rates low enough to cheat our future.

Will a tax incentive do the trick? The answer depends on why savings declined in the first place. The standard story—savings were depressed by all those baby-boomers in their young, high-spending years—is wrong. It does not explain why young families today save less than the young families of 25 years ago. And it says nothing about the growth of the federal budget deficit which now reduces the national savings rate by one-sixth. A better explanation comes from what we can call the curse of the comfort zone.

The story begins 17 years ago when culture and the economy first collided. From World War II through the early 1970s, the U.S. economy grew at a remarkable pace. Average family income doubled from $16,000 to $33,000 (all figures are in today's dollars). To the man in the street, rapid growth meant rapid upward mobility. The proportion of the U.S. population in poverty fell from 32 percent in 1949 to 15 percent in 1970 without substantial redistribution. The proportion of families who owned their homes rose from 43 percent to 63 percent. The middle class was growing rapidly not because incomes were becoming much more equal (they weren't) but because incomes were growing and more families could afford a middle-class life.

Rapid growth stopped in 1973. It fell victim to OPEC oil price increases and a sudden slowdown in the growth of labor productivity—what we now call the competitiveness problem. In 1987, the income of the average family stood at $33,500, a gain of only $500 over 15 years.

In an earlier time, slower growth might have been a signal to consume less and save more. But a quarter-century of fast growth had brought the curse of the comfort zone: The belief that we had solved the problem of production and the economy no longer needed constant tending. A small example: In the early 1970s, only half of male college freshmen said "making a lot of money" was very important in their lives (80 percent say so today). Altruism aside, these freshmen *knew* they would outearn their parents no matter what jobs they took. Economic experts implicitly agreed. Their forecasts kept predicting growth would rebound.

Frank Levy is an economist at the University of Maryland's School of Public Affairs and visiting professor at Brown University. Richard Michel is director of the Urban Institute's Income Security and Benefits Program. This article is reprinted with permission of the authors.

And so people started to cut back on savings to keep consumption growing.

But a quarter-century of fast growth had brought the curse of the comfort zone: The belief that we had solved the problem of production and the economy no longer needed constant tending.

At first glance, this neat story does not square with the data. Department of Commerce statistics say that the personal savings rate held steady in the 1970s and declined sharply in the early 1980s, well after stagnation had set in. But the Department of Commerce defines "personal savings" as the sum of two kinds of money: individuals' discretionary savings and employer payments to employee pension funds. Brookings economist Barry Bosworth has shown that employers in the late 1970s were bringing pension fund reserves into line with the requirements of the new ERISA legislation. As a result, their pension payments were abnormally high. When these payments are removed from the official data, the savings rate of individuals begins to decline in about 1975.

The reluctance to save came at a particularly bad time. Through the 1950s and 1960s, rapid growth reflected adequate investment combined with innovations developed in the 1930s and 1940s: jet propulsion, television, synthetic materials, improved food processing. By the early 1970s, many of these innovations had run their course; they no longer provided a steady stimulus for productivity gain. Continued rapid growth would have required higher savings and investment, the opposite of what occurred.

Sociologist David Reisman saw the problem in a prescient 1969 quote: "Contrary to what I once thought, the economy is not self-propelling. We can see in the United Kingdom the problems that arise when a society becomes psychologically postindustrial long before the economic infrastructure is sound enough to bear the weight of steadily rising expectations."

By 1981, the reluctance to save had spread to the federal budget. No one likes a deficit, but the budget deficit's component parts—big tax cuts and the retention of most programs—had broad political support because they kept consumption growing. The budget deficit further lowered the national savings rate. And by opening the door for the trade deficit, it undercut mobility in a particularly focused way.

By 1981, the reluctance to save had spread to the federal budget.

The shift in mobility patterns during the 1980s is striking. Between 1979 and 1987, the average income of 30-year-old college-educated men rose slightly from $28,500 to $29,900. But the average income of 30-year-old high school-educated men fell from $24,200 to $19,900. The declining incomes of younger high school men reflected declining demand for their skills, a casualty of the trade deficit and its impact on manufacturing employment.

In assembling these facts, we begin to see one version of the future. If 1980–88 growth rates continue, today's typical 30-year-old man with four years of college will have peak earnings of $46,200 (today's dollars), $2,100 more than his college-educated father's best year. Today's 30-year-old man with four years of high school will reach a peak of $26,300, $3,200 *less* than his father's best year. Taken together, these young men and their families will reach retirement with an average net wealth about half of what their parents can expect to have.

Sons replicating fathers (or falling a little short) sounds more like a class system than the American Dream. In a world of limited mobility, few people make big economic gains over their lives. More feel the threat of sliding down the economic scale. People scramble for individual advantage and public purpose becomes increasingly suspect. The government faces a permanent taxpayers' revolt in which Martian exploration, research and development, and aid to the poor join a growing list of luxuries we cannot afford.

This is not a pretty picture, but it helps to explain the two obstacles to higher savings. First, the costs of slow growth have, so far, proceeded from the bottom up. College graduates gained from the trade deficit through cheap Toyotas and Sonys. But young male high school graduates lost substantial income and high-school dropouts lost still more. If an inadequate savings rate had threatened the incomes of talk show hosts and editorial writers, the deficit would have taken on a much greater urgency.

In a world of limited mobility, few people make big economic gains over their lives. More feel the threat of sliding down the economic scale.

The other obstacle to change is the economy's remarkable ability to function as smoothly in decline as in growth. For most of the 20th century, economic troubles have centered on inflation and unemployment, both of which provide good visuals for the evening news. The inadequate savings problem is equally serious, but it produces no great

fireworks and so can be ignored. Incomes grow slowly, we continue to borrow from abroad to supplement consumption, interest rates stay high to attract foreign capital, domestic investment (in both production and people) remains too low—and so incomes continue to grow slowly. Limited economic mobility becomes a fact of life.

The savings story then, is less about tax incentives than about culture, a culture that bombards us with messages to buy things—to not save—every day. In this context, the key to increased savings is a change in national outlook. A utopian thought?

. . . the key to increased savings is a change in national outlook.

Hardly. Within recent memory, the national outlook has changed on cigarette smoking, the seriousness of drunk driving, physical exercise, casual sex (we've been through two reversals on this one), and diet. Think of undersaving as cholesterol: Both are the by-product of immediate gratification, neither involves short-run cost, both accrue slowly with real dangers in the future.

To complete the analogy, we need a public information campaign that talks about inadequate savings as plainly as we talk about cholesterol. If the president believes we are not saving enough, he should say so. But the president must also admit frankly that saving more also means that, in the short run, we must consume less. If he thinks inadequate saving helps explain our slow wage growth, or why we have to scrimp on aid to Eastern Europe, he should say so. We are ready for such a message: Almost three out of four respondents in a recent *Wall Street Journal* poll believe the Japanese economy is now stronger than ours.

. . . we need a public information campaign that talks about inadequate savings as plainly as we talk about cholesterol.

Beyond frank talk, the administration needs to publish minimum guidelines on what people *ought* to save: a simple schedule that relates annual savings to family income and age. In an ambiguous world, disinterested rules of thumb are powerful guides (there is some evidence that the limits set for Reagan-era IRA accounts acted as a guide in this way). And in a world with guidelines on everything from salt intake to safe sex, a problem without guidelines is not seen as a problem.

Almost three out of four respondents in a recent* Wall Street Journal *poll believe the Japanese economy is now stronger than ours.

Honest talk, savings guidelines and a tax incentive would almost put inadequate savings in the proper light. The only missing piece is action on the budget deficit. It is possible to construct a savings program without addressing the deficit. It is possible to lecture the nation on cholesterol while holding a pastrami sandwich. The two cases should yield roughly comparable results.

In a world of shopping malls, savings is about dull banks and passbooks. In the real world, saving is about the future. The trick is to create a future that is large enough for all of us.

It is possible to construct a savings program without addressing the deficit. It is possible to lecture the nation on cholesterol while holding a pastrami sandwich.

The ACCF Center for Policy Research is the education and research affiliate of the American Council for Capital Formation. Its mandate is to promote an understanding by the public of the importance of capital formation to the economy. For additional information on the Center or its saving project, please contact: ACCF Center for Policy Research, 1850 K Street, N.W., Suite 400, Washington, D.C., 20006. (202) 293-5811.

American Council for Capital Formation
Center for Policy Research

March 1990

SPECIAL REPORT

The Revenue and Distribution Impact of the President's Capital Gains Tax Proposal

To further a constructive dialogue on the revenue and distribution impact of President Bush's capital gains proposal, the ACCF Center for Policy Research presents a summary of recent testimony by Kenneth W. Gideon, assistant secretary of the Treasury for tax policy, and statements by Michael J. Boskin, chairman of the Council of Economic Advisers (CEA), and Under Secretary of the Treasury Robert R. Glauber. Both Treasury and the CEA conclude that the preponderance of academic and government studies suggest substantial revenue gains from lower capital gains tax rates.[1]

Details of the Bush Proposal

In general, the Bush administration proposed that the capital gains tax rate for individuals be reduced on long-term investments by enacting a sliding-scale exclusion for long-term capital gains. Under the proposal, assets held by individuals for three years or more would qualify for a 30 percent exclusion, assets held at least two years but less than three years would qualify for a 20 percent exclusion, and assets held at least one year but less than two years would qualify for a 10 percent exclusion. As a result of the exclusion, the tax rate applicable to capital gains on qualified assets held for at least three years would be 19.6 percent for taxpayers in the 28 percent tax bracket. Similarly, investments held by such taxpayers for between two and three years would be taxed at a 22.4 percent rate, and assets held for between one and two years would be taxed at a 25.2 percent rate. Individuals in the 15 percent tax bracket would pay proportionately lower rates of tax (13.5 percent, 12.5 percent, and 10.5 percent, respectively).

Qualified assets would generally be defined as any assets qualifying as capital assets under current law and satisfying the holding period requirements, except for collectibles. Collectibles are assets such as works of art, antiques, precious metals, gems, alcoholic beverages, and stamps and coins. Assets eligible for the exclusion would include, for example, corporate stock, manufacturing and farm equipment, a home, an apartment building, a stand of timber, or a family farm.

Differences in Revenue Estimates

The Treasury Department's Office of Tax Analysis (OTA) estimates that the President's capital gains proposal, if enacted, would increase revenues by $12.5 billion over the budget period and provide modest increases in revenue thereafter. The staff of the Joint Committee on Taxation (JCT) estimates that the proposal would lose $11.4 billion over the same period and continue to lose money thereafter. This represents a difference of $23.9 billion over the budget period.

According to the recent Treasury testimony, there are two major causes for the difference between the OTA and the JCT revenue estimates:

- The OTA assumes a smaller year-to-year change in capital gains realizations, absent any tax code revisions (the baseline forecast).
- The OTA assumes greater taxpayer responsiveness to capital gains tax rate changes (elasticity).

Baseline Forecasts. Table 1 summarizes the principal differences between the Treasury and the Joint Committee on Taxation estimates of the revenue impact of the Bush proposal. The static revenue loss is obtained by multiplying the change in the average tax rate on capital gains by the volume of realizations that would have occurred with no change in the law. The level of realizations that would have occurred with no change in the law is referred to as the "baseline" level of realizations. Differences in static revenue loss estimates can result from differences in baseline capital gains realizations and/or differences in the tax rates used. Table 1 shows that over the 1990-1995 period, the discrepancy in the two static revenue loss estimates is $15.7 billion. The OTA was not able to

[1]Statement of Kenneth W. Gideon, assistant secretary for tax policy, Department of the Treasury, before the Committee on Finance, U.S. Senate, March 6, 1990; and letters to key members of the congressional tax-writing committees from Michael J. Boskin, chairman, Council of Economic Advisers, and Robert R. Glauber, under secretary for finance, Department of the Treasury, March 6, 1990.

Table 1: Treasury and JCT Revenue Effects of the Administration's Capital Gains Proposal

Item		Fiscal Year ($ Billions)						
		1990	1991	1992	1993	1994	1995	1990–95
I. Static effect of 30% exclusion[1]	Treasury	–2.1	–14.3	–15.6	–16.6	–17.5	–18.4	–84.5
	JCT	–2.6	–17.7	–18.7	–19.9	–20.4	–20.9	–100.2
	Difference	0.5	3.4	3.1	3.3	2.9	2.5	15.7
II. Effects of induced realizations[2]	Treasury	2.8	19.3	18.4	17.0	16.6	17.0	91.1
	JCT	3.0	18.9	14.4	14.9	13.4	13.8	78.4
	Difference	–0.2	0.4	4.0	2.1	3.2	3.2	12.7
III. Effect of full depreciation recapture	Treasury	–0.0	–0.3	0.5	1.1	1.6	1.7	4.6
	JCT	0.3	1.8	1.9	2.1	2.1	2.2	10.3
	Difference	–0.3	–2.1	–1.4	–1.0	–0.5	–0.5	–5.7
IV. Effect of phase-in of the 3-year holding period	Treasury	—	–0.1	–1.0	–1.0	0.2	0.2	–1.7
	JCT	—	–0.3	–2.0	–0.9	0.4	1.6	–1.2
	Difference	—	0.2	1.0	–0.1	–0.2	–1.4	–0.5
V. Effect of treating excluded portions of gains as a preference item for AMT purposes	Treasury	—	–0.2	0.5	0.6	0.8	0.8	2.5
	JCT	—	0.1	0.1	0.2	0.2	0.2	0.8
	Difference	—	–0.3	0.4	0.4	0.6	0.6	1.7
VI. Effective date of proposal[3]	Treasury	–0.2	0.4	—	—	—	—	0.2
	JCT	0.1	0.6	—	—	—	—	0.7
	Difference	–0.3	–0.2	0.0	0.0	0.0	0.0	–0.5
VII. Total revenue effect of proposal	Treasury	0.5	4.9	2.8	1.2	1.7	1.4	12.5
	JCT	0.7	3.2	–4.3	–3.6	–4.3	–3.1	–11.4
	Difference	–0.2	1.7	7.1	4.8	6.0	4.5	23.9

Source: Department of the Treasury, Office of Tax Analysis, February 28, 1990.
Note: Details may not add to total due to rounding.
[1]This line reflects an estimate of the proposed exclusion assuming no change in taxpayer behavior.
[2]This line reflects an estimate of the increase in budget receipts attributable to taxpayer decisions to realize more capital gains as a result of the lower tax rate.
[3]Lines I-V, above, reflect a January 1, 1990, effective date; line VI represents an adjustment to these lines to reflect an assumed effective date of March 15, 1990.

separate the part of the JCT estimate due to the average tax rate and the portion due to the baseline estimate of capital gains realizations.

The OTA estimates that baseline capital gains realizations would increase gradually along with growth in the economy. The OTA believes that the JCT's baseline (which is provided to it by the CBO), in contrast, is assumed to jump by over 50 percent from 1988 (the last year for which data are available) to 1990. The OTA believes that the extraordinary increase in capital gains realizations projected by the CBO for this two-year period is highly improbable. Its effect is to raise the baseline level of realizations quite dramatically throughout the budget window, thereby significantly enlarging the JCT's estimates of the static revenue losses.

Taxpayer Responsiveness. Another major difference between the OTA and the JCT estimates, according to the Treasury testimony, is that the JCT estimate appears to assume a lower level of responsiveness (elasticity) by taxpayers, that is, less tendency to sell their assets in order to benefit from the lower capital gains tax rate.[2] The OTA concludes that there is a strong consensus that tax rates have significant effects on capital gains realizations. This result, according to Assistant Secretary Gideon, accords with intuition and simple common sense: lower rates induce more realizations and higher rates cause taxpayers to defer capital asset sales. The decision to realize a capital gain is generally highly discretionary and quite sensitive to the individual's tax environment. Even small differences in elasticities can have large consequences for revenue estimates—thus the concern about the elasticity value that is used.

[2]"Elasticity" is defined as the percentage increase in capital gains realizations divided by the percentage decrease in the overall capital gains tax rate.

The OTA's assumption about capital gains elasticities is based on a review of twelve government and academic studies that have examined the question. Three of these were published by the OTA in 1989. As CEA Chairman Boskin observes in his letter to members of the tax-writing committees on this subject, because the twelve studies use different methods and different data, they arrive at different estimates. While the Treasury and the JCT estimates are both within the range of effects implied by these studies, the Treasury estimate is much closer to the middle of the range: Only two of the twelve studies estimated taxpayer responsiveness as low as the JCT. While Treasury is closer to the average elasticity estimate, nine of the studies found an even greater response of asset sales to capital gains tax rates than did Treasury.

The CEA Chairman states that the three OTA studies released in 1989 by Treasury are the best available; however, it appears that they were not taken into account by the JCT. Each Treasury study employs a different technique and uses a different type of data, but they all arrive at similar conclusions. Each type of evidence has some problems, but the cumulative weight of the work is impressive, according to Chairman Boskin. The Treasury studies employ improved statistical techniques and more advanced modelling strategies than previous studies. For example, instead of choosing a single approach, the studies examine the sensitivity of the estimates to alternative specifications of the statistical model. Second, the studies recognize that individuals can reduce their tax rate through (legal) tax avoidance behavior. The analyses account for the fact that tax rates affect capital gains realizations *and* vice versa. Third, the Treasury studies recognize that there is a learning period after tax changes and permit a gradual adjustment of realizations to changes in the tax rate. Other studies assume that all changes occur immediately. Fourth, a wider range of economic behavior is examined than in previous studies. In particular, the studies analyze the interaction among different types of taxable income such as long-term gains, short-term gains, and ordinary income. Because individuals undertake comprehensive tax planning, this modelling approach produces more reliable estimates, according to CEA Chairman Boskin.

In his testimony, Assistant Secretary Gideon also points out that the elasticity estimates used by Treasury are smaller than those found in nearly all of the studies to date. The OTA assumes an elasticity of 1.2 in the short run, declining to about 0.8 in the long run. An implication of this elasticity is that the average marginal tax rate that would maximize revenues from the capital gains tax is about 23 percent. In other words, a rate either higher or lower than 23 percent would produce less revenue than a 23 percent rate.

While the implied revenue maximizing rate is a useful way to convey the concept of elasticity in a form that is more comprehensible to non-economists, the revenue maximizing rate is not ideal from the standpoint of economic efficiency and growth, according to Treasury. It is instead the upper limit at which tax should be imposed. While a higher tax rate always imposes efficiency losses on the economy by comparison to a lower rate, imposing tax at a rate above the revenue-maximizing rate would cause revenue loss as well.

The OTA's estimates of the latest administration capital gains tax proposal reflect a change in elasticity from that used in 1989 for the President's 15 percent capital gains proposal. Last year the OTA utilized a long-run elasticity of 0.9 rather than the 0.8 used this year. The OTA changed its elasticity in the normal process of updating its model and in an effort to be cautious. The direction of the change would, absent changes in the JCT's elasticities, have narrowed the gap between the two organization's estimates considerably.

Treasury analysis of the JCT estimates leads to the conclusion that the JCT's revenue-maximizing capital gains tax rate is around 35 percent. The implication of the JCT revenue-maximizing tax rate is that if the capital gains tax rate were raised to a level significantly higher than the current tax rates on ordinary income such as dividends and interest, total capital gains revenue would continue to increase. The OTA takes issue with this conclusion, stating that it is aware of no study suggesting that revenues would increase if the capital gains tax rate were significantly higher than the rate of tax on ordinary income. Virtually every study Treasury reviewed that allows computation of a revenue-maximizing rate implied that the maximizing rate is below the rate imposed on ordinary income. This is not surprising since, just as a portfolio effect is anticipated for a rate differential in favor of capital assets, taxpayers would be expected to attempt to shift out of capital assets if the rates imposed on them were higher than ordinary rates. The considered professional judgment of Treasury analysts and the CEA is that the JCT elasticity is simply too low, since it yields such a high revenue-maximizing rate.

Macroeconomic Impacts of Capital Gains Rate Cuts

Neither the OTA nor the JCT includes in its estimates macroeconomic, or "feedback," effects of lower capital gains taxes on economic growth and tax revenues. While this accords with the standard practice

Table 2: Distribution of Taxes on Capital Gains Under Current Law and the Fully Phased-in Administration Proposal

Permanent Adjusted Gross Income[2]	Tax on Capital Gains		Change in Taxes	
	Current Law	Rate Cut[1]	Static	Dynamic
Less than $10,000	0.3	0.3	0.0	0.1
$10,000 to $20,000	0.7	0.7	−0.1	0.1
$20,000 to $30,000	0.8	0.8	−0.1	0.0
$30,000 to $50,000	3.0	3.0	−0.5	0.0
$50,000 to $100,000	7.9	8.2	−1.1	0.3
$100,000 to $200,000	9.7	10.0	−1.4	0.3
$200,000 or more	26.8	27.7	−3.8	0.9
Total	49.0	50.7	−7.1	1.7

Source: Department of the Treasury, Office of Tax Analysis, March 5, 1990.
Note: Fully phased-in proposal at calendar year 1990 levels.
[1]This table is not directly comparable to revenue estimate tables because it shows the fully phased-in Administration proposal at estimated 1990 levels of realizations. The fully phased-in proposal provides 10, 20 and 30 percent exclusions for assets held one, two and three or more years, respectively.
[2]The income classifier for this table is estimated permanent Adjusted Gross Income for 1990 (including capital gains) imputed from a five-year panel of individual income tax returns.

of both staffs, it does not mean that such positive effects will not occur, merely that they are not estimated.

As CEA Chairman Boskin and Under Secretary Glauber note, although the impact of a capital gains tax cut on growth is difficult to measure precisely (and this is one reason that neither Treasury nor the JCT currently includes such formal estimates in its revenue projections), reasonable estimates yield revenue dividends which more than offset any static estimate of revenue loss. In their view, a conservative estimate is that the President's proposal would lower the cost of capital for business by 3.6 percent. The lower cost of capital will increase investment and, therefore, productivity and economic growth. Over the next five years, the lower cost of capital arising from the President's proposal can be reasonably expected to increase GNP by a total of $61 billion, according to the CEA, which would yield roughly $12 billion in added revenue. Even using the extremely pessimistic JCT estimates and making lower-bound assumptions, the capital gains tax cut would increase revenue over the next five years, once economic growth is considered.

Finally, Chairman Boskin and Under Secretary Glauber conclude that this is a conservative estimate of the likely beneficial effects of GNP, because a capital gains tax cut encourages the entrepreneurial, highly productive investments that contribute most strongly to growth. In addition, a capital gains tax cut will help "unlock" investors, allowing them to move to more productive investments. Estimates based only on the reduced cost of capital do not include these important effects on the mix of investment in the economy.

Distribution Effects of Lower Capital Gains Tax Rates

As Assistant Secretary Gideon observes in his testimony, enactment of the Bush proposal *increases* the tax burden of the wealthy. The OTA calculations demonstrate that once the dynamic responses of taxpayers are taken into account, the amount of taxes paid by high-income taxpayers will increase (see Table 2). Taxpayers with incomes of $200,000 or more will pay almost one billion dollars in additional capital gains taxes. The share of taxes paid by lower- and middle-income taxpayers will decline since their taxes do not increase so significantly.

For purposes of comparison, Table 2 also shows how taxes paid would change without taking behavioral changes into account. The distribution of changes in capital gains taxes under the "no behavioral change" assumption appears to show that high-income taxpayers would receive large tax reductions. Dynamic distribution analysis, however, clearly indicates that these high-income taxpayers would pay more in taxes.

Thus, dynamic analysis shows that a capital gains tax cut provides a "win-win" situation: While high-income taxpayers would pay more in taxes, they would be better off because the lower capital gains tax rates will allow them to make investment decisions with less concern about the tax impact. They will have chosen to pay the additional taxes voluntarily. Taxpayers with lower incomes will not pay more unless they also benefit from the rate cut. Overall, the result is to collect relatively more taxes from those with higher incomes.

It should also be pointed out that in Table 2, taxpayers are classified according to their average income over a period of years, which is referred to as "permanent income." This contrasts with a single-year measure of income that includes capital gains, which fails to classify many taxpayers in the correct income class. In particular, the use of single-year income including gains classifies many middle-income taxpayers with large one-time gains from the sale of a small business, a farm or a personal residence as "high-income." As a result, the share of capital gains attributed to high-income taxpayers is overstated. In

contrast, the OTA analysis shown in Table 2 classifies taxpayers by income other than capital gains. By averaging a taxpayer's income over five years, the effects of temporary income spikes are substantially reduced and overcorrection is also avoided.

The JCT's estimate of the distributional effect of lower capital gains rates, according to the OTA testimony, is based solely on the static portion of its estimate. In other words, the JCT ignores the dynamic part of its own estimate. The JCT estimate is therefore a distribution of the benefits of a rate cut to those who would have sold capital assets in any event, but it ignores distribution of the additional tax paid by those who will be induced to sell at lower rates. Table 2 provides a more complete and accurate picture than does the JCT analysis, according to Assistant Secretary Gideon.

Conclusions

Treasury and the CEA conclude that the Treasury estimates are superior to those of the JCT and that the Treasury estimates probably understate the increase in revenue that would result from a cut in the capital gains tax rate. They stress that the best professional evidence is that the increase in revenue arising from lowering the capital gains tax rate will be substantial. Their analyses support the view that the President's capital gains tax proposal represents an opportunity to encourage investment and innovation, create jobs, and promote American competitiveness.

The ACCF Center for Policy Research is the education and research affiliate of the American Council for Capital Formation. Its mandate is to promote an understanding by the public of the importance of capital formation to the economy. For more information or additional copies of this *Special Report*, please contact: ACCF Center for Policy Research, 1850 K Street, N.W., Suite 400, Washington D.C., 20006, (202) 293-5811.

A1310-1,8 F

American Council for Capital Formation
Center for Policy Research

May 1990

SPECIAL REPORT

Alternative Tax Policies to Lower the U.S. Cost of Capital

by John B. Shoven

On May 1, 1990, the American Council for Capital Formation Center for Policy Research sponsored a seminar on "Business Taxes, Capital Costs, and Competitiveness." This roundtable discussion was the first of three seminars that the ACCF Center for Policy Research will host in 1990 as part of a special project on "Tax and Environmental Policies & U.S. Capital Costs." Center for Policy Research board member John B. Shoven, professor of economics at Stanford University, presented the results of his analysis of the impact of various business and individual tax reductions on U.S. capital costs at this seminar. Dr. Shoven's findings are summarized below. The symposium proceedings, including the full text of Dr. Shoven's paper, will be published by the Center for Policy Research as a special project monograph.

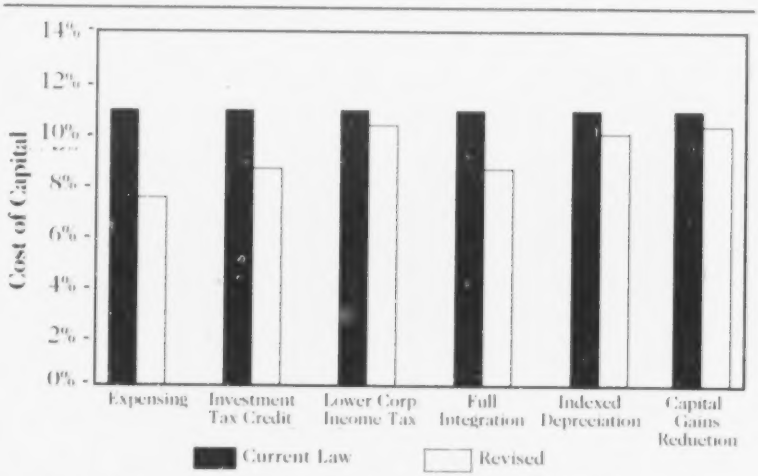
The level of net investment in the United States is low according to both historical and international comparisons. This fact is at the heart of the U.S. competitiveness problem. As a result of this low level of net investment, the real weekly earnings of U.S. workers have fallen over the past seventeen years and now stand at the same level as they did thirty years ago. One of the primary causes of the low rate of investment in our country is the high cost of capital.

The cost of capital depends on the terms demanded in financial markets for investments of varying riskiness and on the taxes that must be paid on the asset's returns. Three factors contribute to the cost of capital faced by investments in new equipment and structures: interest, risk premia, and taxes. In the United States today, the total cost of capital for a moderately risky investment in equipment or structures can easily exceed 12 percent.

A number of tax reforms can be examined in terms of their ability to lower the cost of capital. These include:

- the expensing of new investments
- a 7.5 percent investment tax credit
- lowering the corporate tax rate from 34 percent to 28 percent
- an integrated corporate and personal income tax structure
- the deduction of dividends from the corporate income tax
- a dividend gross-up plan

Figure 1: Impact of Selected Tax Code Revisions on the Cost of Capital for Investment in Equipment



Note: The examples above assume the investment is of moderate riskiness.

- indexing depreciation deductions
- lower capital gains taxes

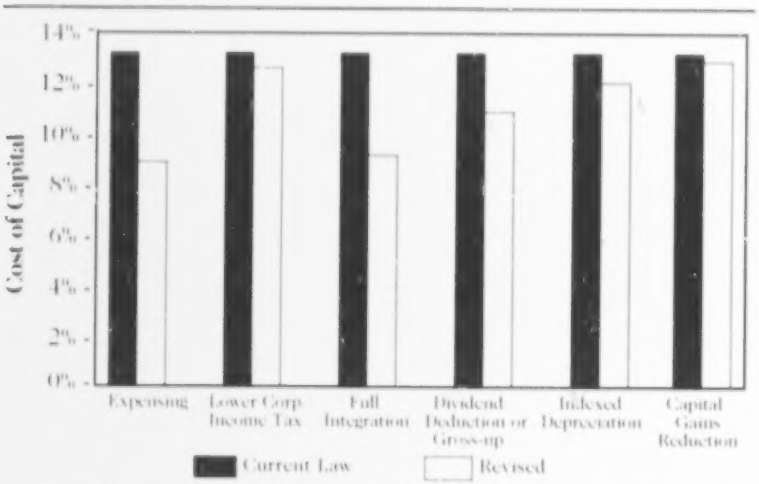
This analysis indicates that tax changes can bring about a significant reduction in the cost of capital. The effectiveness of any tax policy change in reducing capital costs is measured by how much the cost of capital declines as a result of the change.

The alternative reforms listed above vary in their effectiveness in lowering the cost of capital. Expensing, integration of the corporate and personal income tax structure, and a 7.5 percent investment tax credit each could lower the cost of capital by 20 to 30 percent (see Figures 1 and 2). *It appears that lowering the corporate tax rate would affect the cost of capital the least. The most effective option (per dollar of forgone revenue) may be an investment tax credit.*

Reducing capital gains tax rates from 28 to 20 percent would cause a noticeable reduction in the cost of capital, averaging 4.5 percent. In assessing the overall attractiveness of a capital gains tax reduction, however, one should also consider the revenue consequences, which this analysis does not examine. If a capital gains tax reduction resulted in little or no revenue loss, then its appeal would be enhanced even more.

In conclusion, this analysis demonstrates that tax policy changes could lower the U.S. cost of capital, which in turn would result in a higher level of investment and greater competitiveness of the U.S. economy. Because of the long-run beneficial effects for the U.S. economy, these policies deserve serious consideration.

Figure 2: Impact of Selected Tax Code Revisions on the Cost of Capital for Investment in Structures



Note: The examples above assume the investment is of moderate riskiness.

The ACCF Center for Policy Research is the education and research affiliate of the American Council for Capital Formation. Its mandate is to promote an understanding by the public of the importance of capital formation to the economy. For more information or to receive additional copies of this *Special Report*, please contact: ACCF Center for Policy Research, 1850 K Street, N.W., Suite 400, Washington, D.C., 20006, (202) 293-5811.

A130-1.9F

American Council for Capital Formation
Center for Policy Research

June 1990

SPECIAL REPORT

The Impact of Environmental Regulation and Energy Prices on U.S. Economic Growth

At a June 11 symposium on "Environmental Policy and the Cost of Capital" sponsored by the American Council for Capital Formation Center for Policy Research, Harvard Professor Dale W. Jorgenson described the impact that environmental legislation has had on U.S. economic growth. He also presented the results of his new study, "Global Change, Energy Prices, and U.S. Economic Growth,"[1] which considers the potential macroeconomic effects of measures to reduce greenhouse gases in the atmosphere—considered a factor in global warming. This Special Report *offers highlights of Dr. Jorgenson's study.*

Environmental Regulations, Growth, and Capital Costs

The most striking economic development in the United States during the postwar period has been the sharp decline in the rate of economic growth during the 1970s and 1980s. Real output grew at an average annual rate of 3.7 percent during the period 1947–1973. By contrast, the growth rate from 1973 to 1985 was only 2.5 percent, fully 1.2 percentage points lower. Two events coincided with the slowdown: the advent of environmental regulation and the increase of world petroleum prices.

An earlier study, "Environmental Regulation and U.S. Economic Growth" by Jorgenson and Wilcoxen (J&W), focused on the relationship between pollution abatement costs and economic growth.[2] Pollution control legislation began in earnest in the United States in 1965, when amendments to the Clean Air Act set national automobile emissions standards for the first time. The extent of regulation increased dramatically in 1970 with the passage of the National Environmental Policy Act and amendments to the Clean Air Act. In 1972 the Clean Water Act was passed, and revisions to this act and to the Clean Air Act were adopted in 1977. The consequence of this legislation was a large and abrupt shift of economic resources toward pollution abatement, J&W observe.

According to the authors, spending on pollution abatement was insignificant in 1967 but increased substantially from 1968 to 1978; much of this additional spending was required to bring existing facilities into compliance with the new regulations. Since 1978 the growth of pollution abatement costs has leveled off, while the proportion of investment devoted to pollution control devices has declined substantially.

J&W analyze the impact of environmental regulation by simulating the growth of the U.S. economy both with and without regulation. GNP growth was slowed by environmental regulation over the 1973–1985 period, according to the study. Among the environmental regulatory measures, mandated investment in pollution control equipment had the largest impact, with motor vehicle emissions control not far behind. The added operating costs due to pollution abatement played a minor role in the growth slowdown. The three types of environmental regulation together were responsible for a drop in annual GNP growth of 0.191 percentage points.

The cost of environmental regulation in the long run (after 1995) is a permanent, annual reduction of 2.59 percent in U.S. gross national product. This is more than 10 percent of the share of total government purchases of goods and services in the national product during the period 1973–1985. In addition, the cost of capital (defined as the pretax return required by an investor) is almost 5 percent higher in the long run than it would have been in the absence of environmental regulation, and the capital stock is almost 4 percent lower.

---

[1]Dale W. Jorgenson and Peter J. Wilcoxen, "Global Change, Energy Prices, and U.S. Economic Growth," prepared for the American Council for Capital Formation Center for Policy Research symposium on Environmental Policy and the Cost of Capital, Washington, D.C., June 1990.

[2]Dale W. Jorgenson and Peter J. Wilcoxen, "Environmental Regulation and U.S. Economic Growth," *Harvard Institute of Economic Research Discussion Paper Series* (Cambridge, Mass.: Harvard University, July 1989).

Energy Price Increases, Growth, and Capital Costs

J&W's latest study examines another factor that contributed to the U.S. growth slowdown: higher oil prices in the 1970s and 1980s. The results of this new research enable the authors to estimate the probable economic impact of a tax on carbon dioxide emissions (a tax on oil, gas, and coal). The authors note that global warming associated with the greenhouse effect has emerged as a leading environmental concern and that many nations, including the United States, are considering policy measures designed to reduce the rate of greenhouse gas emissions. Senator Tim Wirth and Representative Pete Stark both have recently introduced carbon tax legislation. In addition, environmental groups such as the Natural Resources Defense Council have called for strong, immediate action to reduce the emission of greenhouse gases.

The greenhouse effects come about because trace gases in the atmosphere, often called greenhouse gases, are transparent to visible light but reflect infrared. Sunlight passes through these gases unimpeded and is absorbed by terrestrial objects. Later, much of this energy is emitted as infrared radiation. Since greenhouse gases reflect infrared, they tend to trap energy in the atmosphere, which results in heating. The concentration of greenhouse gases in the atmosphere determines how much energy is trapped and thus how much heating occurs.

Carbon dioxide (CO_2) is the most important contributor to the greenhouse effect, but other gases are also important. Much of the carbon dioxide in the atmosphere originates as a natural consequence of respiration, but combustion, particularly of fossil fuels, has increased the atmospheric concentration by 25 percent since the industrial revolution. Human activity has also increased the concentration of most of the other greenhouse gases, especially chlorofluorocarbons, which are widely used in refrigeration and in the production of certain kinds of foam. At present rates of emission, carbon dioxide accounts for about one-half of the increases in the concentration of greenhouse gases, while other gases account for the remainder.

That greenhouse gases trap energy and lead to heating of the atmosphere is not controversial; a great deal of uncertainty exists, however, about *how much* heating will be produced by a given increase in greenhouse gases and *when* the heating will occur. Current research indicates that the concentration of greenhouse gases is likely to double in the next century, with mean surface temperatures rising by 1.5 to 5.5 degrees centigrade. Historical data indicates that global temperatures have risen by 0.5 degrees centigrade during the past 100 years and that the rate of increase has been accelerating.

The environmental consequences of global warming could be quite severe. Global warming might, for example, change patterns of precipitation, cause land to be inundated by increases in the sea level, and increase the frequency of violent storms such as hurricanes. As a consequence, a sizable constituency is urging policy measures to reduce greenhouse gas emissions. For example, the Toronto Conference on the Changing Atmosphere, held in June 1988 and attended by representatives from forty-eight nations, recommended that world carbon dioxide emissions be reduced by 20 percent of the 1988 level by the year 2005 and eventually be reduced by 50 percent.

Policy Options for Reducing Carbon Dioxide

Several policies have been suggested for reducing emissions of greenhouse gases:

- *A tax on fossil fuels based on their carbon content.* Such a tax could be used to reduce emissions of carbon dioxide. This would lead to substitution of other inputs for fossil fuels and an increase in the relative utilization of fuels such as natural gas that have a lower carbon content. The sources of carbon dioxide are electric utilities (33 percent), transportation (31 percent), industry (24 percent), and residential (12 percent). A carbon tax would shift energy utilization in these sectors toward other energy sources, such as solar, nuclear, and hydroelectric power.
- *Phasing out the use of chlorofluorocarbons* (CFCs). Although they form only a tiny fraction of greenhouse gases, CFCs are very effective at trapping infrared radiation.
- *Reforestation.* This policy option is recommended by the Environmental Protection Agency. Since growing forests absorb carbon, an aggressive program of planting trees and other vegetation could partially compensate for an increase in carbon dioxide emissions.

The Model

A carbon tax employs higher energy prices, especially higher prices of fossil fuels, to reduce carbon dioxide emissions. Measuring the economic impact of future taxes on carbon dioxide emissions is an easier task today, according to J&W, because of the experience gained during oil price increases of the 1970s and 1980s. The past two decades of U.S. experience with oil price increases have provided a natural experiment that is useful in assessing the economic impact of a carbon tax for reducing emissions. Between 1973 and 1975 the price of imported petroleum increased by a factor of three

as a consequence of supply disruptions associated with the Arab oil embargo. Between 1978 and 1980 oil prices doubled as a result of disruptions in supply that followed the Iranian revolution.

The past two decades of U.S. experience with oil price increases have provided a natural experiment that is useful in assessing the economic impact of a carbon tax for reducing emissions.

The dramatic increases in real world petroleum prices during the 1970s were followed by a gradual decline in prices between 1980 and 1985 that gave way to a precipitous drop in 1986. By 1987 real petroleum prices had stabilized at levels that were more than double those prevailing in 1972. The increase in world petroleum prices raised the real cost of energy in the United States for all forms of energy. This increase in energy prices resulted in substantial energy conservation and stabilized carbon dioxide emissions between 1972 and 1987. Emissions of carbon dioxide released 1.224 billion tons of carbon into the atmosphere in 1972; fifteen years later in 1987 the emissions were identical.

In order the analyze the natural experiment of energy price changes on economic growth that resulted from higher world petroleum prices since 1973, J&W simulated the growth of the U.S. economy with and without these price increases, using a general equilibrium macroeconomic model disaggregated to thirty-five industrial sectors. Their model differs from previous ones in two respects. First, it incorporates an econometric analysis of an extensive new data base, developed specifically for the purpose of modeling the economic impact of environmental regulation. Second, it is highly disaggregated in its representations of producer and consumer behavior, which is essential in capturing the differential impact of policies to reduce greenhouse gas emissions by firms and households.

Impact of Higher Oil Prices

J&W's study shows that the higher oil prices that resulted from the supply disruptions in 1973–1975 and 1978–1980 have significant long-run (post-1995) effects on U.S. annual growth rates and costs:

- Real GNP growth is 1.3 percent lower.
- The price of investment goods is 1.1 percent higher.
- The capital stock is 0.9 percent lower.
- The cost of capital is 0.9 percent higher.
- The exchange rate (the price of U.S. imports relative to the price of U.S. exports) is 1.3 percent higher.

J&W conclude that the 1972–1987 world oil price increase had a substantial long-run impact on the level of the U.S. real GNP. However, this *increase in petroleum price levels* explains only a relatively modest portion of the slowdown in U.S. economic growth over the period 1974–1985. A much larger part of the slowdown in economic growth can be attributed to the *petroleum price shocks* of the 1970s. Isolating these price shocks from the change in world petroleum price levels, J&W find that almost *two-thirds* of the slowdown in U.S. economic growth between 1974 and 1985 can be attributed to the sharp run-up in oil prices that ended in 1981.

J&W's analysis also shows that energy price increases have had powerful effects on certain industries. For example, higher oil prices resulted in a drastic fall in the output of the petroleum refining sector, and the output of electric utilities is also substantially lower, compared to baseline levels. The output of chemicals manufacturing and gas utilities is also reduced by higher oil prices, while foods and tobacco experience a modest increase in output as a consequence of substitution away from energy-intensive commodities by businesses and households.

Conclusions

J&W's study shows that most of the slowdown in economic growth over the 1974–1975 period can be traced to the petroleum price *shocks* of the 1970s rather than the *increase* in petroleum price levels between 1972 and 1987. Abrupt changes in energy prices can be very costly in terms of foregone growth and higher capital costs for the U.S. economy. Although the changes that J&W analyzed are due to disruptions in the world oil markets in the 1970s and 1980s, sharp increases in prices could also result from the imposition of taxes on fossil fuels intended to stabilize emissions of carbon dioxide. Thus the Jorgenson-Wilcoxen analysis suggests that a tax on carbon dioxide emissions that resulted in sharp energy price increases would have negative effects on U.S. growth and capital costs.

The ACCF Center for Policy Research is the education and research affiliate of the American Council for Capital Formation. Its mandate is to promote an understanding by the public of the importance of capital formation to the economy. For more information or to receive additional copies of this *Special Report*, please contact: ACCF Center for Policy Research, 1850 K Street, N.W., Suite 400, Washington, D.C. 20006, (202) 293-5811.

TA1310-1-10F

American Council for Capital Formation
Center for Policy Research

August 1990

SPECIAL REPORT

International Survey of the Taxation of Personal Saving and Saving Rates

A review of saving incentives offered in twelve industrialized countries recently completed by the American Council for Capital Formation Center for Policy Research revealed that the United States offers fewer and less generous saving incentives than most other industrialized countries. The survey is part of a series of studies by the Center on saving issues.

The international survey indicates that the United States ranks near the bottom of a list of twelve countries in terms of personal saving incentives. For example, the U.S. capital gains tax rate on long-term gains on portfolio securities exceeds that of all other countries except Australia and the United Kingdom, and even they index the cost basis of an asset. Interest income is taxed at rates below the U.S. maximum rate of 33 percent by five of the twelve countries. Total taxes (individual plus corporate) on dividends received by individuals are lower in most countries than in the United States because most other countries have some form of dividend tax relief. For example, Japan's total individual and corporate tax rate is 45 percent on dividends and West Germany's is 26.7 percent, compared to the U.S. rate of 56 percent.

Individual Retirement Account deductions are more generous in six of the twelve countries than they are in the United States. Nearly half of the twelve countries permit deductions or tax credits for life insurance premiums; the United States does not. Individual social security contributions to government-sponsored plans are deductible in eight of the twelve countries but not in the United States.

Given the relatively weak U.S. saving incentives, it is perhaps no coincidence that the U.S. personal saving rate, which averaged 6.7 percent over the 1972–1989 period, remains far below that of our major competitors. Japan, for example, had a personal saving rate for this period of 18.4 percent, West Germany's rate was 12.8 percent, and Canada's was 12.4 percent.

An *International Survey of the Taxation of Personal Saving and Saving Rates* was prepared by David Tumblin, research associate with the ACCF Center for Policy Research. A major compendium of research on saving issues, *The U.S. Savings Challenge: Policy Options for Productivity and Growth* edited by Charls E. Walker, Mark A. Bloomfield, and Margo Thorning, will be available in October 1990.

Country	Personal Saving[1] 1972–1989	Capital Gains Maximum Tax Rate[2] Short-Term	Capital Gains Maximum Tax Rate[2] Long-Term	Interest Income Maximum Tax Rate[3]	Dividend Income Corp./Ind. Integration[4]	Dividend Income Combined Corp./Ind. Max. Tax Rate[5]
United States	6.7%	33%	33%	33%	No	56%
Japan	18.4%	1% of sales price or 20% of net gain.	1% of sales price or 20% of net gain.	20%	Yes	45%
Australia	10.4%	47%	47% ; asset cost is indexed.	47%	Yes	13.1%
Belgium	15.1%	Exempt	Exempt	10%	No	55.8%
Canada	12.4%	21.8%	21.8%	29%	Yes	19.6%
France	16.7%	16%	16%	56.8%	Yes	35.2%
Germany (West)	12.8%	53%	Exempt	53%	Yes	26.7%
Hong Kong	N.A.	Exempt	Exempt	Exempt	Exempt	Exempt
Italy	21.7%	Exempt	Exempt	30%	Yes	21.9%
Netherlands	3.3%	Exempt	Exempt	60%	No	74%
Sweden	1.8%	35%	17.5%	35%	No	40.5%
United Kingdom	9.8%	40% ; asset cost is indexed.	40% ; asset cost is indexed.	40%	Yes	20%

Country	Individual Retirement Plans[6]	Life Insurance Premiums[5]	Social Security Contributions
United States	Contributions to $2,250 are fully deductible for joint returns with income to $50,000; $2,000 for single filers with income to $35,000.	Not deductible.	Not deductible.
Japan	No provisions.	Both term and whole life premiums are deductible.	Fully deductible.
Australia	Contributions are taxed at a rate of 15% , compared to a top 47% rate for ordinary income.[7]	Not deductible.	No provisions.
Belgium	Contributions are deductible to a limit.	Both term and whole life premiums are deductible.	Fully deductible.
Canada	Contributions to employer-sponsored plans are deductible to $3,025.	Not deductible.	Individual contributions receive a 17% tax credit.
France	Contributions may accumulate tax free to $108,402.	A 25% tax credit is allowed on term premiums.	Fully deductible.
Germany (West)	No provisions.	Both term and whole life premiums are deductible.	Individual contributions are deductible to a limit.
Hong Kong	No provisions.	Not deductible.	No provisions.
Italy	No provisions.	Both term and whole life premiums are deductible.	Individual contributions are deductible to a limit.
Netherlands	Contributions to $9,087 are deductible.	Not deductible.	Individual contributions are deductible to a limit.
Sweden	Contributions to $4,978 are deductible.	Not deductible.	Contributions are by employers only.
United Kingdom	Contributions to 15% of total compensation are fully deductible.	Not deductible.	Not deductible.

Note: All information is current through April 1990. The tax rates given refer only to federal taxes.

[1] Net household saving as a percent of disposable household income. Organisation for Economic Co-Operation and Development, *OECD Economic Outlook* 47, June 1990, Table R 12, p. 192.

[2] Reflects top marginal tax rates on portfolio securities gains.

[3] Reflects top marginal tax rates on interest received.

[4] Corporate individual tax integration refers to methods used to relieve the double taxation of corporate earnings distributed to shareholders. These methods vary among countries.

[5] The total maximum federal tax rate on corporate earnings distributed to the individual. The maximum U.S. rate is 56% (34% per dollar at the corporate level, plus 33% of the remainder [$.0.66] when received by the individual).

[6] Currency conversions based on exchange rates on July 18, 1990.

[7] Taxpayers with income below $24,158 can opt to receive annual tax rebates up to $584 for individual retirement plan contributions instead of having the contribution taxed at a 15% rate.

[8] Term life and whole life insurance premiums are differentiated because of their saving characteristics. Term policies are generally short term and build only small cash values, whole life insurance provides increasing cash values and pays face value to a beneficiary on the death of the insured.

The ACCF Center for Policy Research is the education and research affiliate of the American Council for Capital Formation. Its mandate is to promote an understanding by the public of the importance of capital formation to the economy. For more information or to receive additional copies of this *Special Report*, please contact: ACCF Center for Policy Research, 1850 K Street, N.W., Suite 400, Washington, D.C. 20006, (202) 293-5811.